PINNACLE
CONSULTING ENGINEERS

Boherboy SHD

Traffic and Transport Assessment

January 2022

Prepared for:

Kelland Homes Ltd.

Durkan Group

Kelland Homes

DURKAN

STRUCTURAL • CIVIL • DUE DILIGENCE • ENGINEERING MASTERPLANNING
FLOOD MANAGEMENT • INFRASTRUCTURE DESIGN
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PINNACLE
CONSULTING ENGINEERS

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APPROVALS

	Name	Signature	Position	Date
Prepared by	Ronan Kearns		Associate Transport Planner	21/01/22
Reviewed by	James Mayer		Director	21/01/22
Approved by	James Mayer		Director	21/01/22

VERSIONS

Number	By	Date	Context
1	Ronan Kearns	10/04/2020	Draft
2	Ronan Kearns	16/04/2020	Parking summaries removed
3	Ronan Kearns	29/06/2020	Pre-Planning - ABP
4	Ronan Kearns	19/08/2020	Updated draft
5	Ronan Kearns	21/08/2020	Development description updated
6	Ronan Kearns	May'21	Issued for Planning
7	Ronan Kearns	Oc't21	General Update
8	Ronan Kearns	19/10/21	General Update
9	Ronan Kearns	21/01/22	Issued for Planning

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1 Introduction

1.1 Background

This Traffic and Transport Assessment has been prepared by Pinnacle Consulting Engineers in support of a Strategy Housing Development application to An Bord Pleanála for the development of 655 no. dwellings, comprised of 257 no. 2, 3 & 4 bed, 2 & 3 storey detached, semi-detached & terraced houses, 152 no. 1, 2 & 3 bed duplex units in 17 no. 2-3, 3-4 & 4 storey blocks, and 246 no. 1, 2 & 3 bed apartments in 9 no. buildings ranging in height from 2, 2-5, 4-5 & 5 storeys, and a 2 storey crèche (693m²).

Access to the development will by via 3 No. vehicular access point from the Boherboy Road, Corbally Estate and Carrigmore and along with proposed upgrade works to Boherboy Road to include the provision of a roadside footpath along the front of the site at the Boherboy Road, continuing eastwards to the junction with the N81 Blessington Road (for an overall distance of c.370m). The proposed development also provides for pedestrian and cyclist connectivity to the adjoining Carrigmore Park to the north-east, and vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath to the east and Carrigmore Green to the north.

The proposed development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station at the northern end of the site, (ii) public open spaces, including alongside the Corbally Stream, which will accommodate the provision of pedestrian / cyclist links to Carrigmore Park to the north-east, (iii) hard and soft landscaping and boundary treatments, (iv) undercroft, basement & surface car parking (914 no. spaces including EV parking), (v) bicycle parking (797 no. bicycle parking spaces), (vi) bin storage, (vii) public lighting, and (viii) 5 no. ESB sub-stations, all on an overall application site area of 18.3ha. In accordance with the Fortunestown Local Area Plan (2012) an area of approx. 1.42ha within the site is reserved as a future school site.

The site has an area of 18.26Ha.

The site is located approximately c. 13.7 Km southwest of Dublin City Centre and is bounded to the north by Carrigmore Estate; Corbally Estate to the east; agricultural land to the west and Boherboy Road to the south.

The site is currently a greenfield site.

The site location is shown in Figure 1.

In order to complete this report, Pinnacle Consulting Engineering has referred to the following documents:

- The Traffic Management Guidelines (2019);
- Guidance on Transport Assessment (2014);
- Design Manual for Urban Road and Streets (2019);
- Design Standards for New Apartments - Guidelines for Planning Authorities (2022);
- South Dublin County Development Plan 2016 - 2022;
- 2012 Fortunestown Local Area Plan (LAP);
- GDA Cycle Network Plan - National Transport Authority; and
- N81 Hollywood Cross to Tallaght Road Improvement Scheme – Kildare NRDO

Figure 1 Site Location (Source: GeoHive)

1.2 Objectives

The main objective of this report is to examine the traffic impact of the proposed development and its access arrangements on the local area road network. The net change in traffic on the network due to additional traffic has been calculated and its impact on the local area road network has been determined.

1.3 Study Methodology

The methodology adopted for this report can be summarised as follows:

Existing Traffic Flow Assessment: - Baseline traffic counts were undertaken on the 3rd of March 2020 prior to the first Covid 19 lockdown.

Existing Transport Infrastructure: - Pinnacle Consulting Engineering collected information on public transport, walking and cycling in the area of the proposed development.

Development Proposals: - Description of proposed development, including proposed improvements to the road accesses to the site and a review of parking and servicing provisions, and facilities for pedestrians and cyclists.

Development Trip Generation Figures: - Based on the schedule of accommodation of the proposed development, Pinnacle Consulting Engineering derived trip rate data and developed development traffic flows, which were assigned to the existing network having regard for traffic patterns on Boherboy Road and the surrounding network.

Percentage Impact: - The development traffic impact on key junctions was considered, taking account for traffic growth and committed development traffic.

Assessment of Junction Capacity: - The operation of key junction, with and without the proposed development, was undertaken, to determine future operation and any requirements for mitigation measures.

1.4 Structure of Report

The remainder of this report is divided into the following sections:

- Section 2 considers the location of the site and existing traffic flows.
- Section 3 discusses the proposed development.
- Section 4 considers the traffic generation and potential impacts of the development.
- Section 5 contains an analysis of capacity of key junctions, including proposed mitigation measures.
- Section 6 provides a summary and conclusion.

2 EXISTING TRAFFIC CONDITIONS

2.1 Existing Conditions

The subject site forms the southern parts of two separate and contiguous landholdings at Boherboy, Co. Dublin and is currently an undeveloped site.

The development site abuts Citywest/Carrigmore to the north, the Corbally Estates to the east, Boherboy Road to the south and farmland to the west. Boherboy Road links Saggart Village to the N81.

The location of the site is shown on the map extract at Figure 2 below.

The site is 18.26Ha in size.

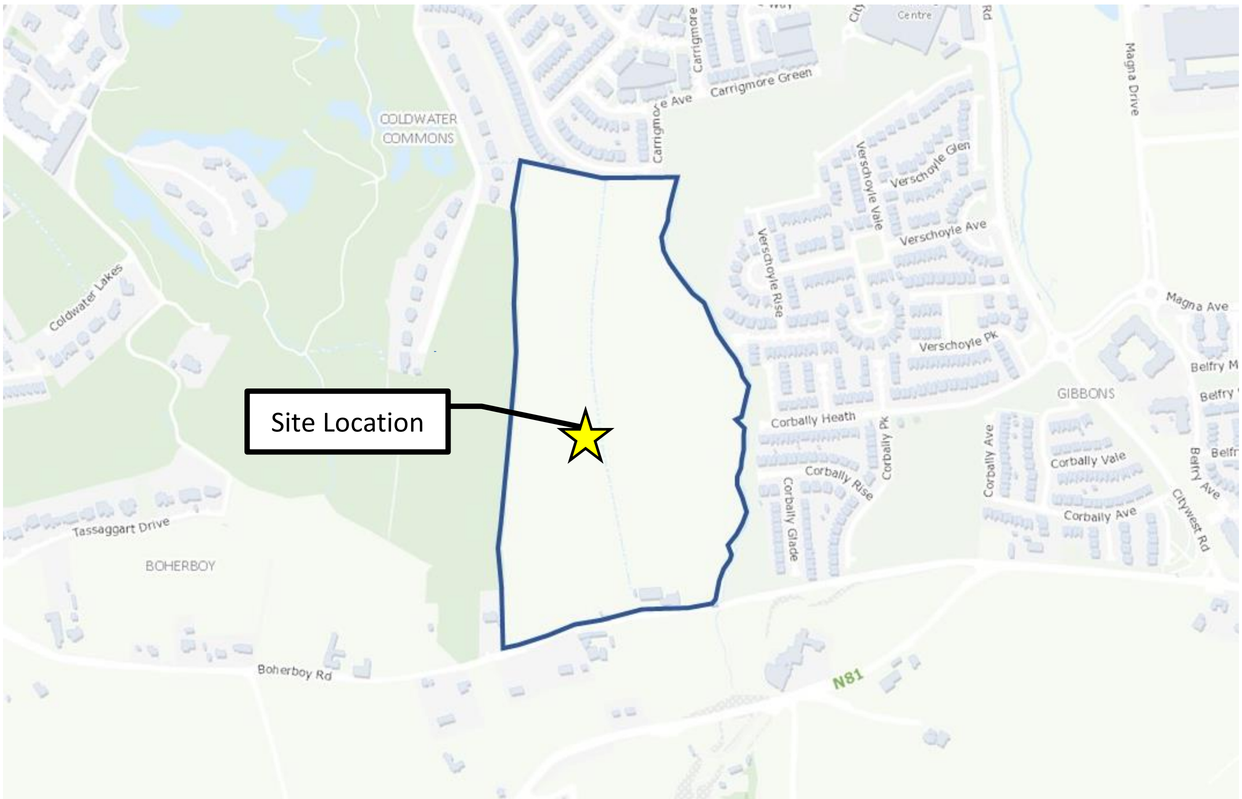

Figure 2 Site Location and Local Road Network (Source: GeoHive)

2.2 Existing Road Network

A summary of the existing road network is provided below:

The road network surrounding the site provides a variety of movement functions. Boherboy Road links Tallaght in the east with Saggart in the West. The N82 provides access to Dublin via the M7/N7 and to other inter urban motor ways via the M50.

Boherboy Road, Corbally Estate and Carrickmore Estate will be the primary access points into the proposed development.

These routes provide for pedestrians, cyclists and motorists alike and a general commentary on these facilities is presented below:

Boherboy Road

Boherboy Road is a local country road forming a priority-controlled junction with the N81 to the east and a signal-controlled junction with Church Street/Castle Street to the west.

The carriageway width is approximately 6.0m along the site frontage with no footpaths along the site frontage.

Boherboy Road has a country road character providing access to Saggart from the N81.

A speed limit of 60km/h was noted on Boherboy Road along the site frontage.

No cycle facilities were noted along Boherboy Road.

N81

The N81 road is a national secondary road starting at the M50 motorway and ending Tullow, County Carlow.

The carriageway width is approximately 11.0m at the junction with the Boherboy Road.

As the N81 leaves Tallaght the speed limit increases to 80km/h.

There is limited pedestrian infrastructure adjacent to the junction with the Boherboy Road. No cycle facilities were noted along the N81 in the vicinity of its junction with the Boherboy Road.

2.3 Traffic Counts

It is proposed that the subject site will be accessed directly from the Boherboy Road and 2 No. accesses through Carrigmore Estate to the north and Corbally estate to the east. Pedestrian access will coincide with the vehicular access with additional connectivity onto Boherboy Road and the Carrigmore District Park.

To quantify the volumes of traffic movements at key points on the road network adjacent to the site, a set of classified turning movement traffic counts were commissioned. The location of these counts was agreed in consultation with the senior executive engineer of South Dublin Council's Transportation Department.

Accordingly, classified counts were carried out on the 3rd of March 2020 at the following junction locations:

- Site 1 – Site Access
- Site 2 – Boherboy Road/N81
- Site 3 – N81/N82 Signal Controlled Junction
- Site 4 – N82/Corbally Heath Roundabout
- Site 5 – N82/ Fortunestown Lane Signal Controlled Junction
- Site 6 – Carrigmore Estate/Fortunestown Lane Priority Controlled Junction.
- Site 7 – Church Road/Fortunestown Signal Controlled Junction.
- Site 8 – Boherboy Road/Saggart Signal Controlled Junction.

The surveys were carried out on the date identified above to ensure that flows were representative of normal term time and hence not affected by school holidays or other public holidays or events. As such they provide an appropriate and robust representation of a neutral month during a period of normal school and employment activity. The surveys are designed to provide representative values encompassing AM and PM peak periods during normal traffic conditions and where not affected by Covid 19 lockdowns as the count took place before the first national lockdown.

The results of the traffic surveys are also set out in Appendix A of this report.

The locations of the surveys are each pertinent to the proposal in terms of being at key nodes in the road network that would be affected by traffic assignment and distribution of flows associated with the development site.

The location of the survey points is depicted below at Figure 3.

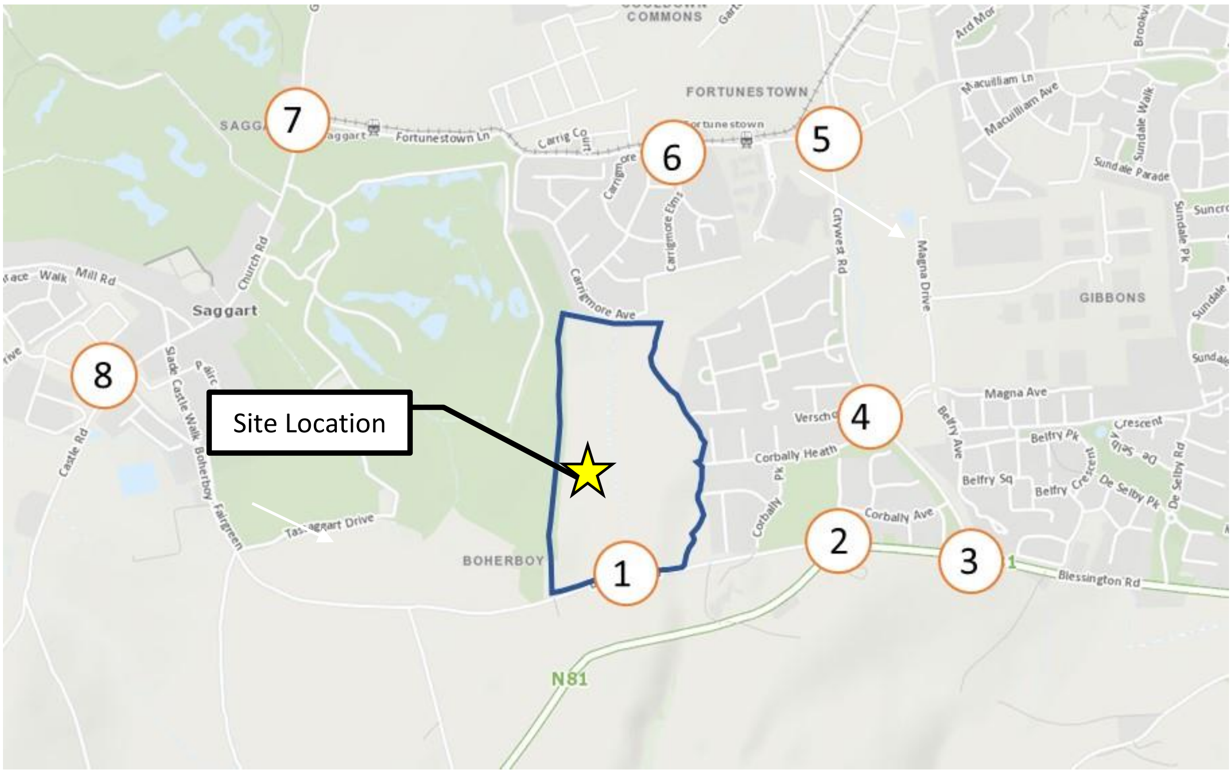

Figure 3 Survey Location

2.1 Public Transport

2.1.1 Background

Local public transport infrastructure is illustrated in Figure 4 below.

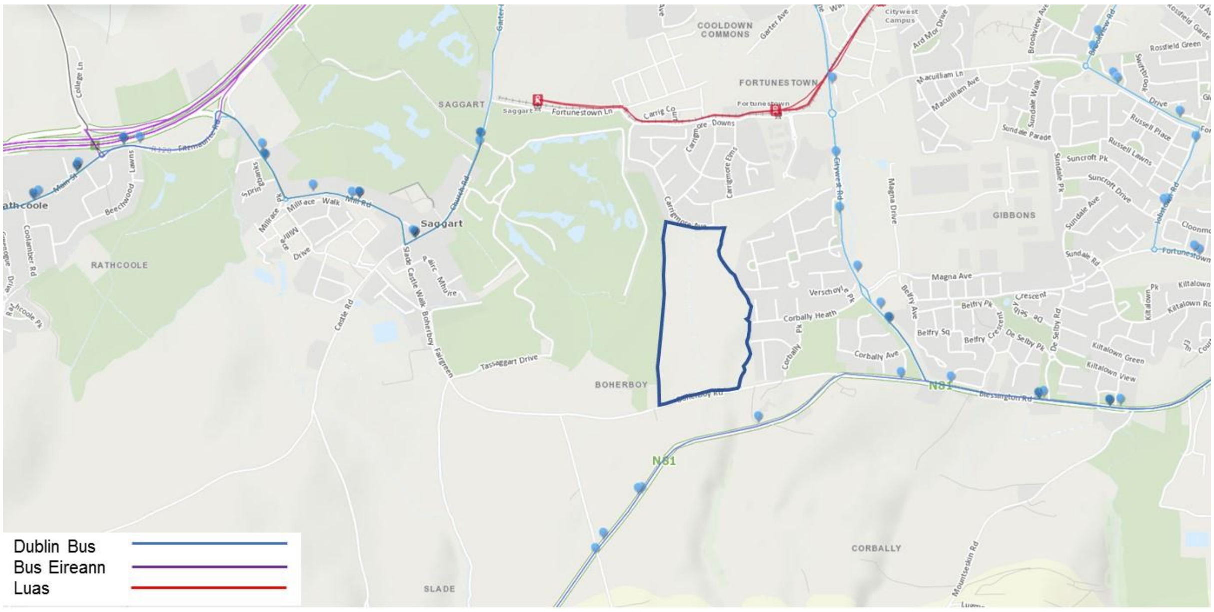

Figure 4 Local Public Transport Infrastructure

2.1.2 Bus

There are numerous bus operators providing a bus service locally and within walking distance to the site, with further details shown in Table 1 below.

No.	Route	Service		Mon-Fri	Sat	Sun
65	Poolbeg Street - Valleymount Road	Poolbeg Street	First	05:30	05:40	08:00
			Last	23:0	23:15	23:15
		Valleymount Road	First	06:30	07:10	09:30
			Last	00:15	00:20	00:20
		Frequency		Up to 15/day	Up to 12/day	Up to 10/day
65b	Poolbeg Street -Citywest	Poolbeg Street	First	05:50	05:50	09:00
			Last	23:30	23:30	23:30
		Citywest	First	06:50	07:00	08:30
			Last	23:30	23:30	23:30
		Frequency		Up to 18/day	Up to 17/day	Up to 15/day

77a	Ringsend Rd. - Citywest	Ringsend Rd	First	05:40	05:55	07:00
			Last	23:25	23:25	23:30
		Citywest	First	06:00	06:20	08:00
			Last	23:30	23:20	23:30
		Frequency		Up to 14/day	Up to 17/day	Up to 3/day
77x	Citywest - UCD Belfield	Citywest	First	07.20	-	-
			Last			
		UCD Belfield	First	-	-	-
			Last			
		Frequency		1 per day	-	-
69	Hawkins St. - Rathcoole	Hawkins St.	First	06:15	06:20	10:00
			Last	23:15	23:15	23:15
		Rathcoole	First	06:00	06:15	11:15
			Last	00:05	00:05	00:10
		Frequency		Up to 20/day	Up to 21/day	Up to 12/day
175	UCD - Kingswood Avenue	Kingswood Avenue	First	06:00	07:10	08:10
			Last	23:20	22:15	22:15
		UCD	First	06:15	08:15	09:15
			Last	22:15	23:20	20:05
		Frequency		Up to 19/day	Up to 17/day	Up to 16/day

Table 1 Local Bus Services

Measured from the centre of the site, the nearest stop is located approximately 670m (Route A /c. 9 mins walk time) and 1.46km (Route B / c. 19 mins walk time). These routes are illustrated in Figure 5.

Route A and Route B provide access to the services outlined in Table 1.

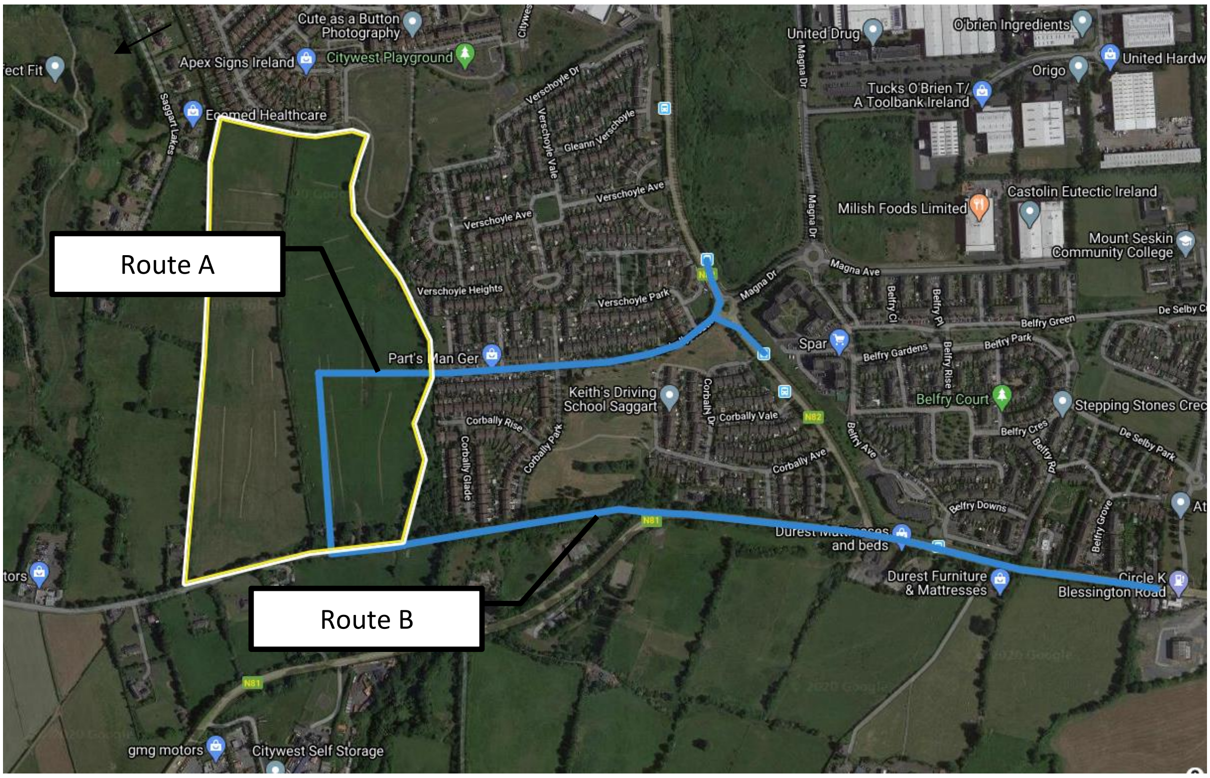

Figure 5: Walk Routes (Source: Google Maps)

2.1.3 Luas

The Luas Red Line (Saggart/Tallaght to Conolly/The Point) calls at the Fortunestown which is located approximately 950m north of the subject site.

Luas Red Line					
Monday – Friday (05:30-00:00)		**Saturday (06:30-00:00)**		**Sunday (07:00-23:00)**	
Peak	Off Peak	Peak	Off Peak	Peak	Off Peak
3-6	6-15	7-8	10-15	11-12	-

Table 2 Luas Green Line Frequency (minutes) – (source www.luas.ie)

The Luas has a major terminus at the Square, Tallaght which is also a major terminus for Dublin Bus. The Square is served by Dublin Bus with several local routes. Currently timetabled bus services adjacent to the site include the 27 (which has approximately 80 services per day in each direction from Clarehall to Jobstown), the 49 (which has approximately 37 services per day in each direction from Pearse Street to Tallaght), the 54a (which has approximately 30 services per day in each direction from Pearse St. towards Ellensborough / Kiltipper Way), the 65 (which has approximately 14 services per day in each direction from Hawkins Street to Blessington/Ballymore), the 75 (which has approximately

38 services per day in each direction from the Square to Dun Laoghaire), the 76 (which has approximately 40 services per day in each direction from Tallaght to Chapelizod), the 76a (which has approximately 3 services per day in each direction from Tallaght to Blanchardstown Centre) and 77a (which has approximately 56 services per day in each direction from Ringsend to Citywest).

Figure 6 Luas Walk Times

Measured from the centre of the site, the nearest stop is located approximately 950m (c. 10 mins walk time) from the site. This is illustrated in Figure 6.

2.2 Walking and Cycling

There is no footpath located along the site frontage. The public footpath terminates at the junction between the N81/Boherboy Road. A footpath is located c. 450m west of the development which provides access to Saggart.

There is no cycle network located along the site frontage. Existing cycle routes identified by the National Transport Authority (NTA) in the vicinity of the site are indicated in Figure 7 below.

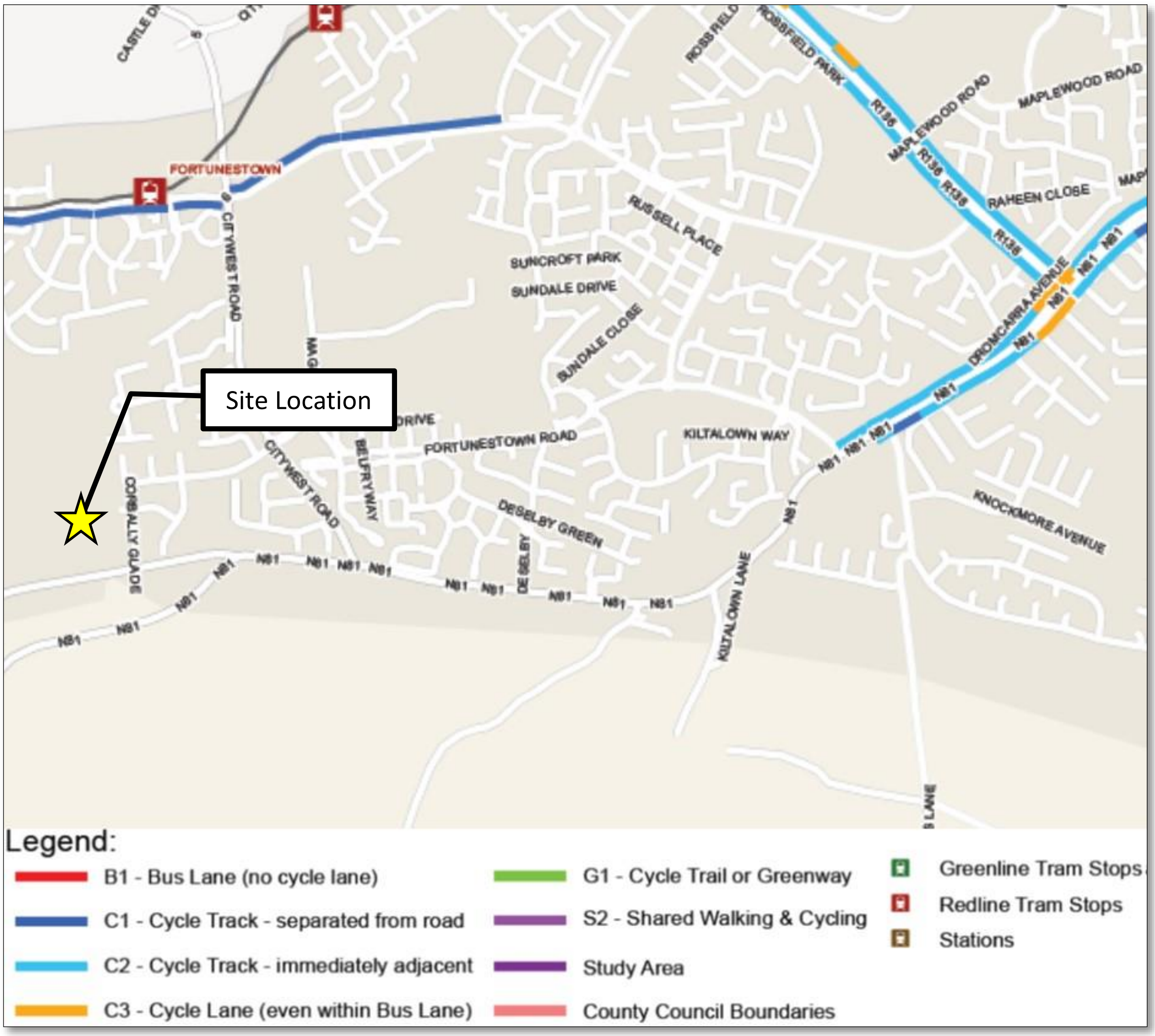

Figure 7 Existing Cycle Routes (Source: NTA)

2.3 Local Amenities

As illustrated in Figure 8, the proposed development site is well placed in terms of the availability of and access to local amenities. There are several primary and post primary schools within 5km of the subject site. The subject site benefits from good access to local retail and leisure facilities. Furthermore, the subject development site is well places to benefit from local employment opportunities at Citywest Business Campus to the north and Magna Business Park to the east.

As part of the development, it is proposed improve pedestrian and cyclist permeability to local public transport services and amenities. Prior to first occupation it is intended to construct a pedestrian and cycle route through Carrigmore District Park to the north and a footpath linking the proposed development to the N81 in the east via the Boherboy Road.

Future connectivity has been allowed for via the Corbally estate but is subject delivery by South Dublin County Council, as the local authority.

The connectivity through Carrigmore District Park and Boherboy Road to local public transport services will reduce car dependency and will reduce the concerns regarding access and connectivity.

Figure 8 Pedestrian/Cyclist Permeability

A summary of the proposed pedestrian/cycle connectivity is provided below:

Fotutnestown Lane

The route to the Fotutnestown Lane measures approximately 1.2km to the Luas stop, another 250m to the bus stops (into town) and 350m to the next bus stop (out of town). This equates to approximately 10/15-minute walk time.

N82

The route to the N82 measures approximately 650m to the bus stops located on the N82 via Corbally Estate. This equates to approximately 7/8-minute walk time.

N81

The route to the N81 measures approximately 1.15km to the nearest bus stop (into town) and another 200m to the next stop (out of town). This equates to approximately 10/15-minute walk time.

All pedestrian routes service the same bus routes. The route through Corbally has a higher amenity value as it provides access to local shops, schools, Luas etc.

2.4 Permeability

Permeability for residents and visitors to the proposed development is a key factor in determining the long-term sustainability when considering modal choice.

To encourage a shift away from car dependency, residents and visitors to the development must have viable alternative choices such as walking routes and cycle routes public transport links.

2.4.1 Walking

Figure 9 outlines the walking distance covered by the average person in a 15-minute period. It illustrates the local amenities that are available to the proposed development. Local amenities within 15-minutes' walk of the proposed development include:

- Citywest Shopping Centre
- Fotutnestown Luas Stop
- Access to bus network
- School
- Carrigmore District Park

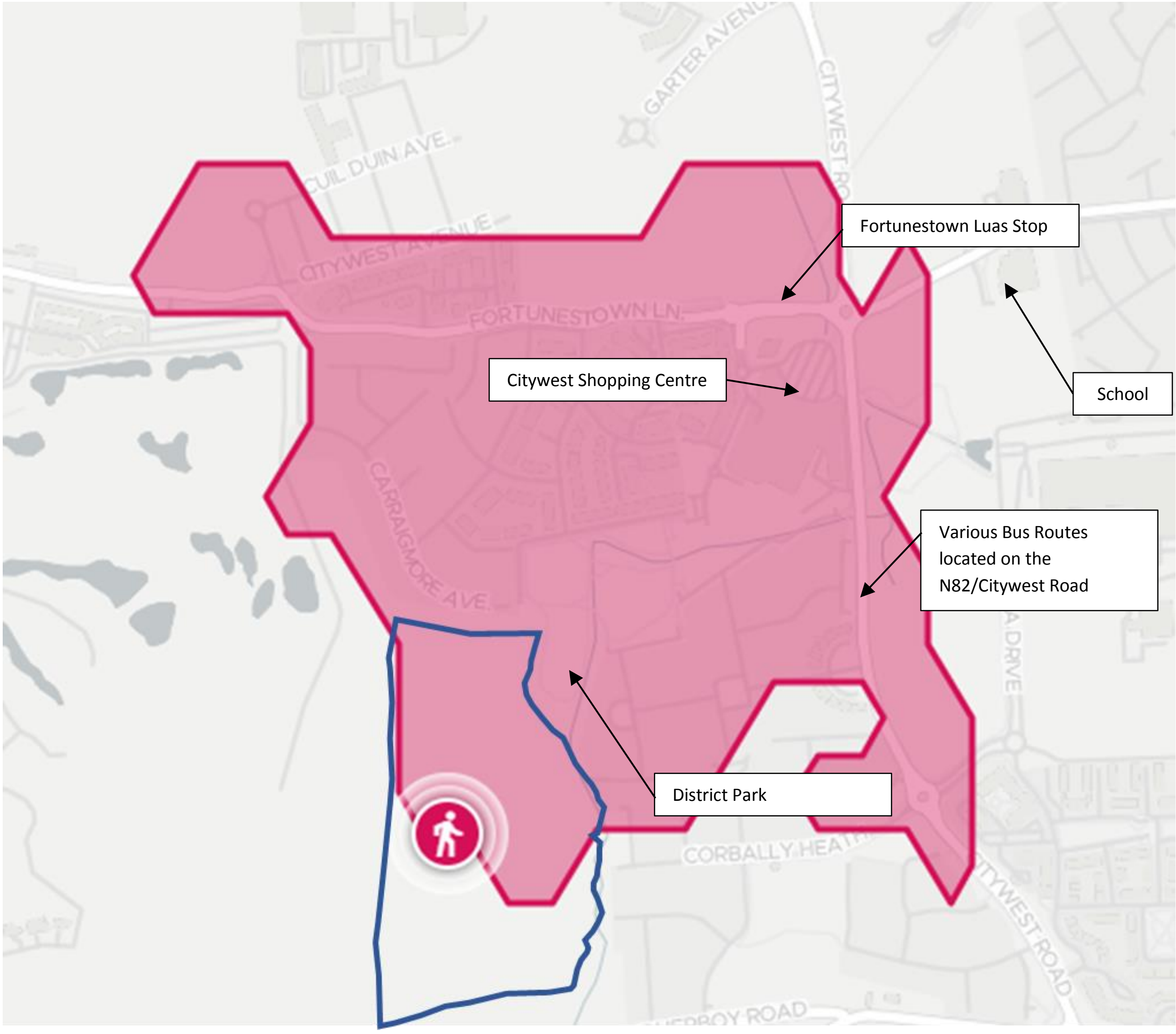

Figure 9 Walking Distance (15 Min Travel Time)

2.4.2 Cycling

Figure 10 outlines the cycling distance covered by the average person in a 30-minute period. These routes are a combination of cycle lanes and shared routes.

It illustrates the local amenities that are available to the proposed development. Local amenities within 30-minutes cycle of the proposed development include:

- Citywest Shopping Centre
- Fotutnestown Luas Stop
- Access to bus network
- School
- Carrigmore District Park
- Access to areas of employment (Citywest Business Campus, Tallaght Village)
- Allows access to/from surrounding areas including:
    - Tallaght
    - Clondalkin
    - Firhouse
    - Rathchoole
    - Newcastle

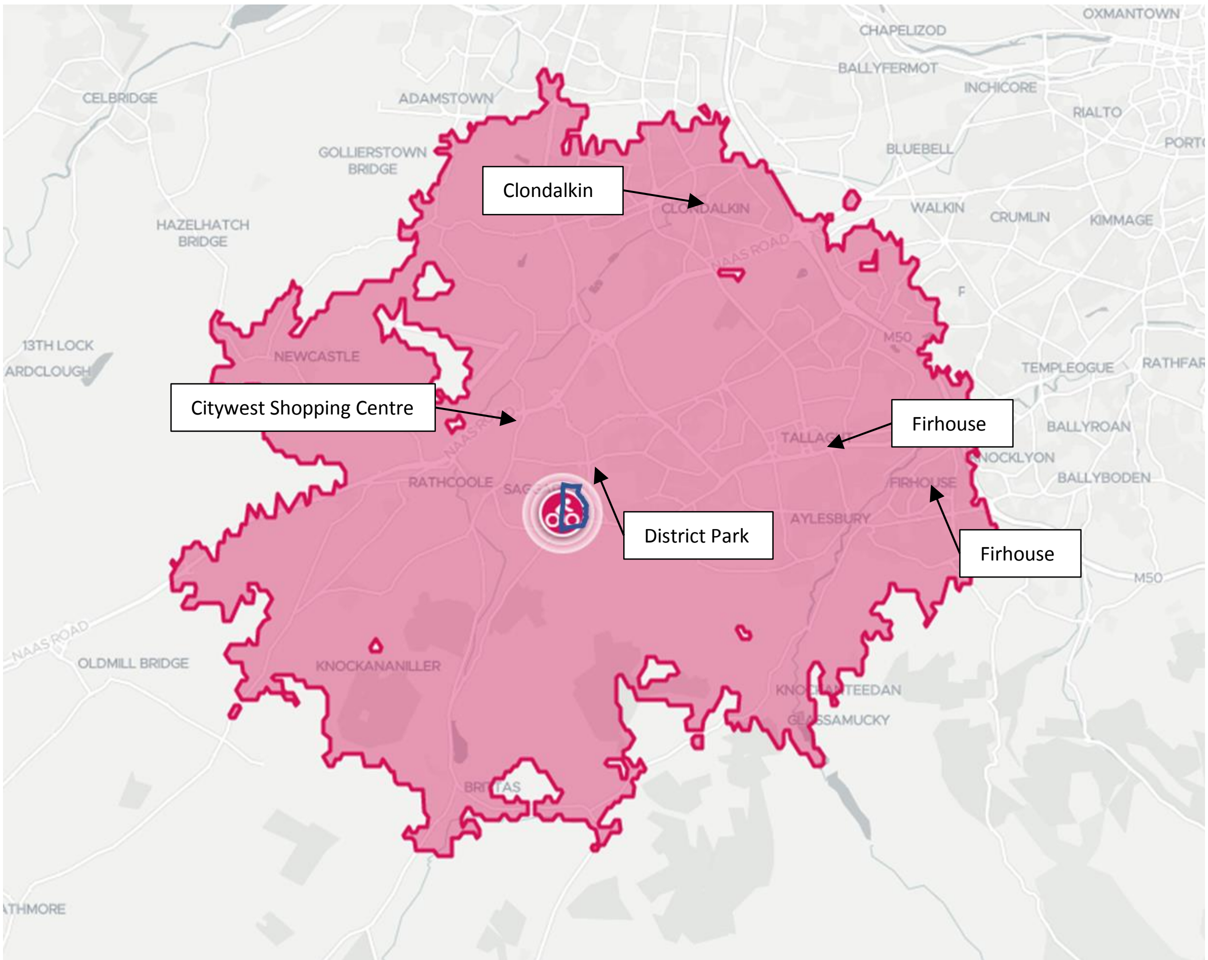

Figure 10 Cycle Distance (*3*0 Min Travel Time)

2.4.3 Public Transport

Figure 11 outlines the distance that maybe covered on a 90minute public transport journey.

A 90-minute public transport journey allows access to areas of employment such as:

- Citywest Business Campus
- Tallaght
- Dublin City Centre
- IFCS

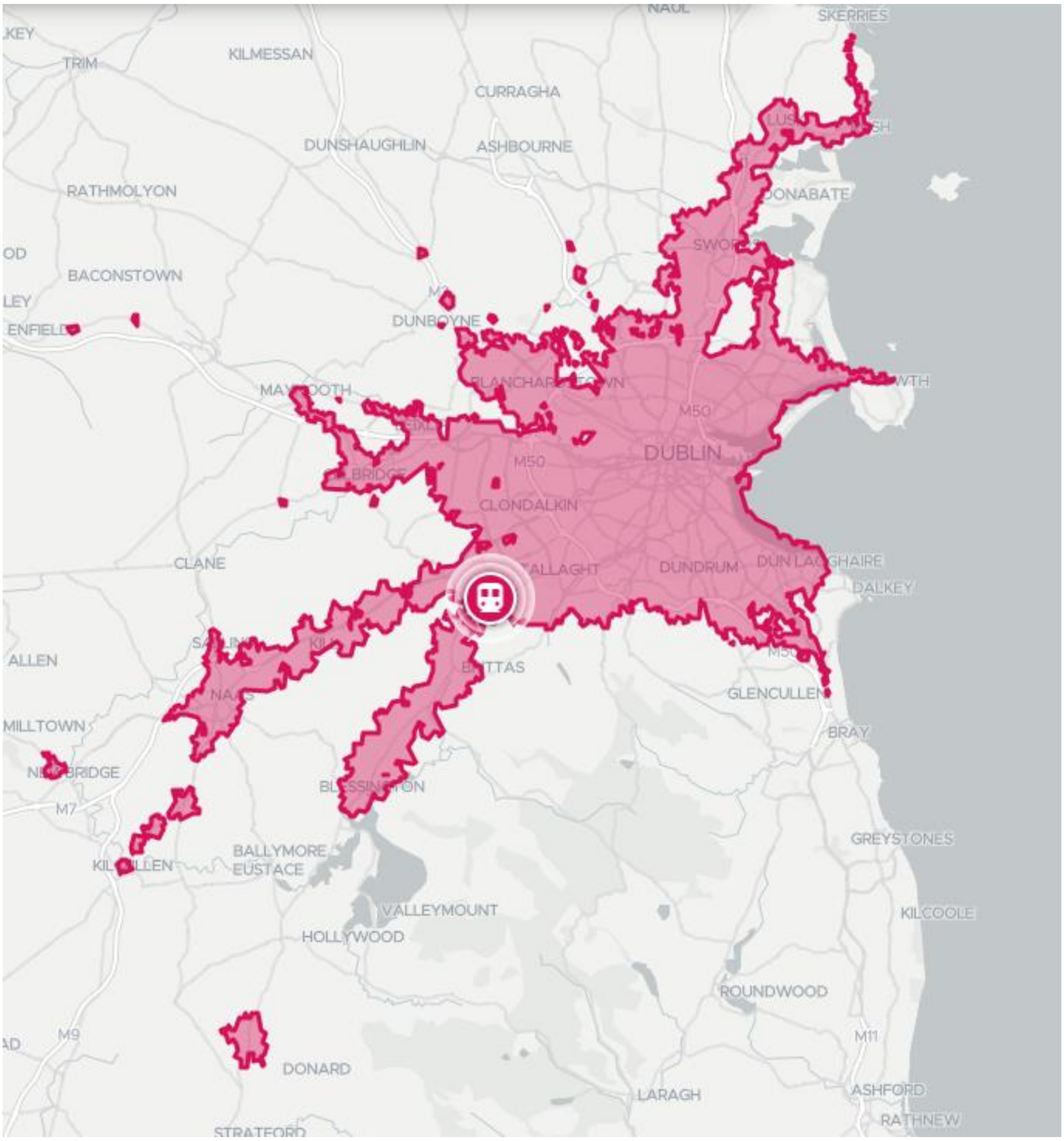

Figure 11 Public Transport (90min Travel Time)

A 90-minute public transport journey allows access from areas such as:

- Lusk (North County Dublin)
- Donard (North Wicklow)
- Dun Laoghaire (West Dublin)
- Maynooth (North Kildare)

This permeability opens up the site to all Third Level Institutions located within Dublin and Kildare (NUIM). It also offers permeability the major amenities located within Dublin City Centre (shopping, entertainment) and the gateway towns into Dublin where the likes of major retail parks are located.

The proposed site is located within 90-minute public transport link to all major Dublin sporting and event venues.

2.4.4 Driving

The site has strong permeability to local amenities via walking, cycling and public transport. This will help reduce, but not eliminate, car trips.

Where car-based trips are required, the proposed development has good access to the M50, M7/N7 and the N81.

For car heading north and east via the M50, the direct route is via Carrickmore and the N7. For car heading south and east via the M50, the direct route is via the N81. For car heading west via the M7, the direct route is via Carrickmore and the N7.

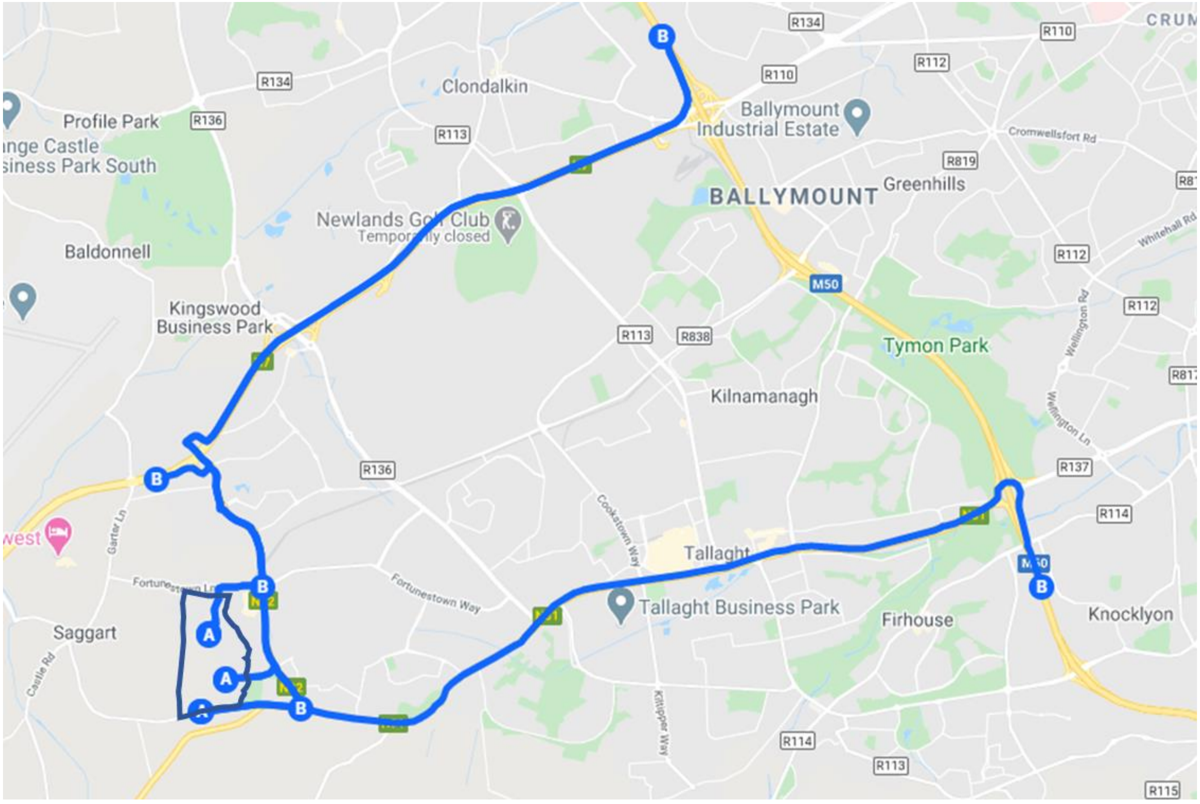

Figure 12 Road Accessibility

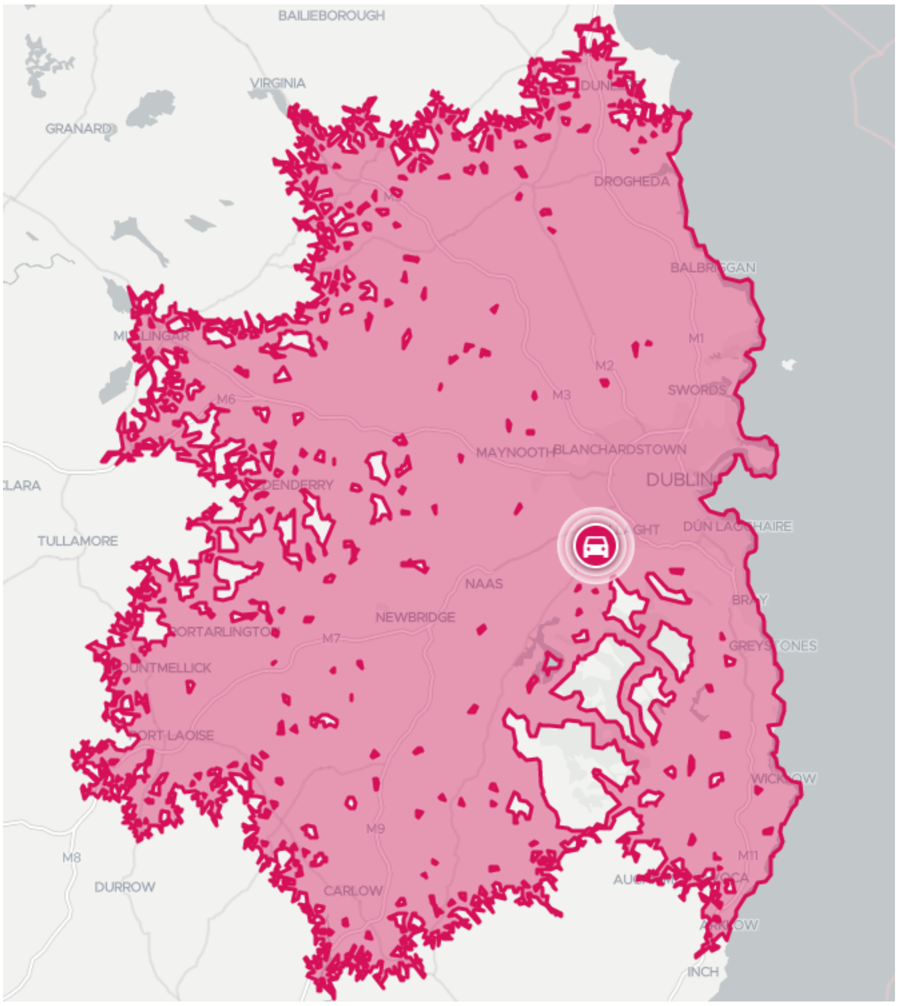

Figure 13 Road Travel Distance (60 min Travel Time)

Figure 13 outlines the travel distance by car for a 60 min travel time.

2.4.5 Summary

As part of the proposed development, connectivity will be provided via Carrickmore Estate, Corbally Estate and Boherboy Road.

These links will provide a significant level of pedestrian, cyclist and public transport permeability to the site to established local amenities such as Citywest Shopping Centre, Citywest Business Campus and local Schools.

2.5 Road Safety Data

A review of the Road Safety Authority (RSA) traffic collision database has been undertaken for the road network in the vicinity of the proposed site to identify any collision trends. This review will assist to identify and potential safety concerns in relation the existing road network.

Traffic collision data was obtained for the period 2005-2016 which is the most recent data available from the RSA website. These incidents are categorised into class of severity, which includes minor, serious or fatal collisions. The analysis is shown in Figure 14.

The analysis has 3 No, minor incidents along Boherboy Road adjacent to the proposed development frontage. These incidents were classed as 2 No. single vehicle collisions and 1 No. head on collision.

As part of the proposed development (including the provision of a footpath from the development site to the N81), appropriate design measures will be undertaken to ensure that the required sight lines and forward visibility is provided at access points to reduce the likelihood of incidents occurring.

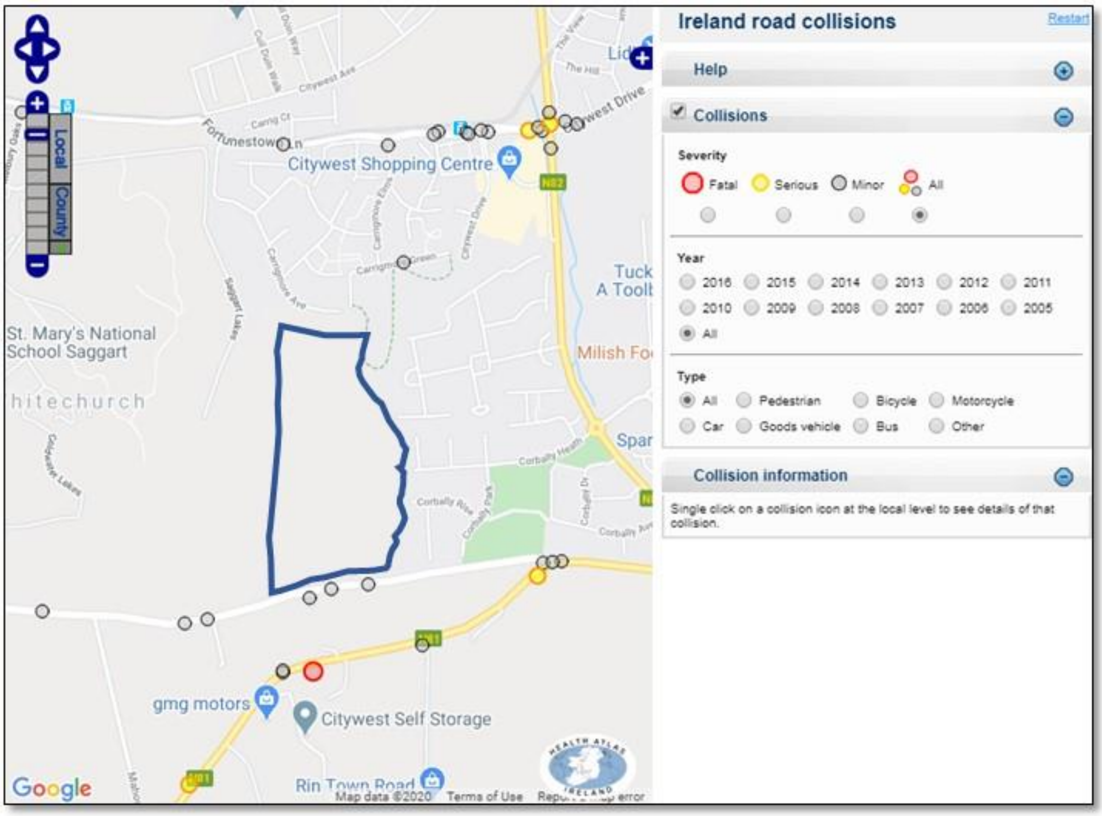

Figure 14 Road Collisions (Source: RSA)

2.6 Planning Search

A planning search was undertaken to identify any developments that have planning permission but are not yet implemented or any schemes that are implemented but are as of yet occupied.

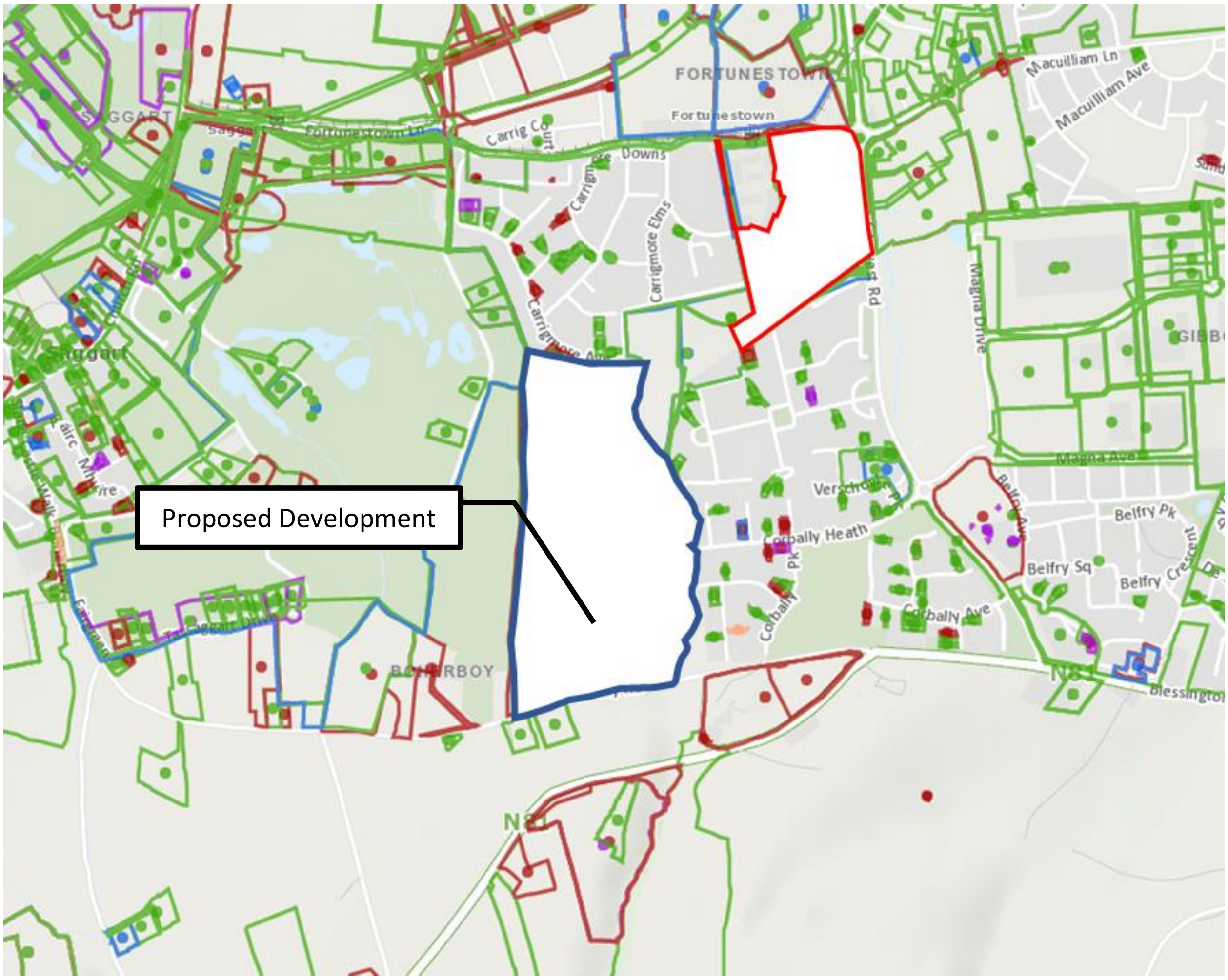

Figure 15 Planning Applications Overview (Source: South Dublin Council)

Figure 15 illustrates all planning applications in the vicinity of the proposed development including those granted (green), pending and refused (red).

The following applications were deemed the influence the study area of the proposed site:

Register Reference: SHD3ABP-305556-19

Status: Granted subject to conditions

Development Description: '*Mixed use residential scheme (total GFA 26,929sq.m) comprising 6 blocks with balconies/terraces to be provided on all elevations at all levels for each block, to provide 290 apartment units and associated residential amenity facilities, a childcare facility, 4 retail units and 2 café/restaurant units. A total of 153 car parking spaces (including 2 car club spaces) are proposed at surface level and existing basement level of the Citywest Shopping Centre to serve the development to include the reallocation of 37 existing surface level spaces; 67 new surface level spaces and the reallocation of 49 spaces from commercial to residential use at existing basement level of the Citywest Shopping Centre*.'

Register Reference: SHD3AP-306602-20

Status: Granted subject to conditions

Development Description: *'Construction of a residential development of 463 dwellings comprising 353 apartments, 89 houses and 21 duplex apartments, creche (c.587.8sq.m) and community building (c.141sq.m) as follows: (A) 353 apartments in 7 apartment buildings (with balconies or terraces [including communal terraces] as follows: Block 1 (6 storeys with a part 7 storey level) of 57 apartments; Block 2(6 storeys with a part 7 storey level) of 47 apartments; Block 3 (6 storeys over undercroft/semi-basement with a part 7 storey level) of 56 apartments with car parking and ancillary plant/storage at basement level; Block 4 (6 storeys over undercroft/semi-basement with a part 7 storey level) of 56 apartments with car parking and ancillary plant/storage at basement level; Block 5 (6 storeys with a part 7 storey level) of 47 apartments; Block 6 (6 storeys over undercroft/semi-basement with a part 7 storey level) of 58 apartments with car parking and ancillary plant/storage at basement level; Block 7 is 6 storeys of 32 apartments (creche at ground and first floor) with outdoor play area. (B) 89 houses; House types 1A, 2A, 4, 4A- 3 storey to front [2 storey to rear] remainder of house types 2 storey. (C) 21 duplex apartments in 2 3-storey buildings. (D) Single storey community building including management office, 3 single storey ESB substations, single storey bicycle and bin stores. (E) 401 car parking spaces (including 3 car sharing spaces) to serve overall development and 364 bicycle spaces ([for apartments] with apartment bicycle storage provided internally at ground floor level for apartment blocks 1-7). (F) Provision of public open space areas within the development (including playground areas and communal open space areas); all ancillary landscape works, public lighting, planting and boundary treatments including regrading/re-profiling of site where required as well as provision of footpaths and cycle paths. (G) Vehicular access to the proposed development will be from the Citywest Road (N82) and will include pedestrian crossings and works to facilitate access (including vehicular and footpath/bridges over stream/ditch), secondary vehicular and pedestrian access to boundary to lands to north (currently under construction) and pedestrian to boundary to Magna Drive. (H) Provision of surface water and underground attenuation and all ancillary site development work. The application contains a statement setting out how the proposal will be consistent with the objectives of the relevant SDCC Development Plan.'*

Register Reference: SHD3ABP- 305563-1

Status: Granted subject to conditions

Development Description: **'***(1) The demolition of 5 structures on site, total area measuring 359sq.m, comprising 2 habitable dwellings and 3 associated outbuildings/sheds located to the northwest of the site; (2) development of 406 residential homes; (3) a childcare facility (518sq.m GFA); (4) 1 commercial unit (67.7sq.m GFA); (5) reservation of a school site (1.5ha); (6) new vehicular, cycle and pedestrian access from Main Street; (7) continuation of Newcastle Boulevard forming part of a new east-west link street; (8) a new Public Park (2ha); (9) pocket parks and greenway together with associated internal access roads, pedestrian and cycle paths and linkages; (10) 1 single storey marketing suite (81sqm) and signage (including hoarding) during the construction phase of development only and (11) all associated site and development works. The overall site comprises lands to the south of Main Street (c.15ha) together with 3 additional infill sites at the corner of Burgage Street and Newcastle Boulevard (c. 0.8ha); No. 32 Ballynakelly Edge (c.0.05ha); and Ballynakelly Rise (c.0.18ha)'*

Register Reference: SHD3ABP-308088-20

Status: Granted subject to conditions

Development Description: **'***Demolition of 5 existing residential properties and associated outbuildings and the construction of a residential development of 204 units, comprising 151 Houses (including Duplexes) and 53 Apartments. The basement for the apartment block includes 49 car parking spaces, 87 bicycle parking spaces, circulation, plant areas, refuse storage areas and other associated facilities. There are an additional 12 visitor bicycle parking spaces for the apartment block provided at surface level. Access to the apartment block is directly from Stoney Hill Road via a new access from an existing dropped kerb. The development also includes 306 surface car parking spaces, 169 bicycle parking* *spaces (comprising of 99 spaces at basement and surface for the apartment block, 60 secure spaces for the apartments in the duplex units and 10 visitor parking spaces at surface level), communal open space for the apartments, public open space including a children's playground and a linear park to the south of the site. New vehicular entrances from Stoney Hill Road (one to the apartment building to the north of Stoney Hill Road and a second to the remainder of the development further south on Stoney Hill Road). The proposed development also includes a 2 storey creche building plus and outdoor play area located on an existing undeveloped portion of the Peyton site located to the west of Stoney Hill Road.'*

Note that the above SHD applications take into account the majority of the recently permitted developments in the Boherboy, Saggart and Citywest area.

An allowance has been made for the school site, with appropriate linked trip reduction has also been allowed for.

These developments will be included the modelling of the impacted junctions. Where a Traffic & Transport Assessment is available the figures will be taken directly. If no Traffic & Transport Assessment is available Trip Rate Information Computing System (TRICS) will be used to estimate flows from the development and traffic surveys used for distribution.

These trips were assigned to the local road network and combined with the traffic counts referenced in Section 2.3 of this report to form the baseline traffic data.

2.7 Potential/Proposed/Committed Infrastructure Works

There are several potential new infrastructure schemes in the vicinity of the proposed development site. Consideration has been given to the impact that these infrastructure schemes may have on the development. This will ensure that provision is allowed for these schemes to be delivered in the future.

A summary of the potential road infrastructure schemes is outlined below.

2.7.1 Bus Connects

The emerging Bus Connects Dublin plan (Ref: Core Bus Corridors Project Report June 2018) proposes revisions to Dublin's bus system through: -

- building a network of new bus corridors on the busiest bus routes to make bus journeys faster, predictable and reliable;
- completely redesigning the network of bus routes to provide a more efficient network, connecting more places and carrying more passengers;
- developing a state-of-the-art ticketing system using credit and debit cards or mobile phones to link with payment accounts and making payment much more convenient;
- implementing a cashless payment system to vastly speed up passenger boarding times;
- revamping the fare system to provide a simpler fare structure, allowing seamless movement between different transport services without financial penalty;
- implementing a new bus livery providing a modern look and feel to the new bus system;
- rolling out new bus stops with better signage and information and increasing the provision of additional bus shelters; and
- transitioning - starting now - to a new bus fleet using low emission vehicle technologies.

The Dublin Area Bus Network Redesign (which is currently under review following the public consultation stage) aims "to provide a network designed around the needs of Dublin today and tomorrow, rather than based on the past".

Figure 16 below presents the proposed public transport provision in the vicinity of the subject site compared to the existing provision. The main difference between the existing and proposed is the inclusion of a new bus interchange within the Citywest Shopping Centre located in the immediate vicinity of the subject development site.

As part of the Dublin Area Bus Network Redesign Dublin Bus routes 65B and 77a will be replaced by a new Route W8 between Citywest and Tallaght which is also proposed to provide a direct service to Maynooth / Celbridge. Improved service frequencies are proposed to destinations to the east via several proposed new routes.

The existing 77x bus route will be replaced by new orbital routes (S6 / S7) which will provide direct Dublin Bus route 69 is proposed to be replaced by a new route 63 which does not result in a change to the existing service between Citywest and the City Centre.

Go-Ahead Bus route 175 is not proposed to be subject to change as part of the Bus Connects scheme.

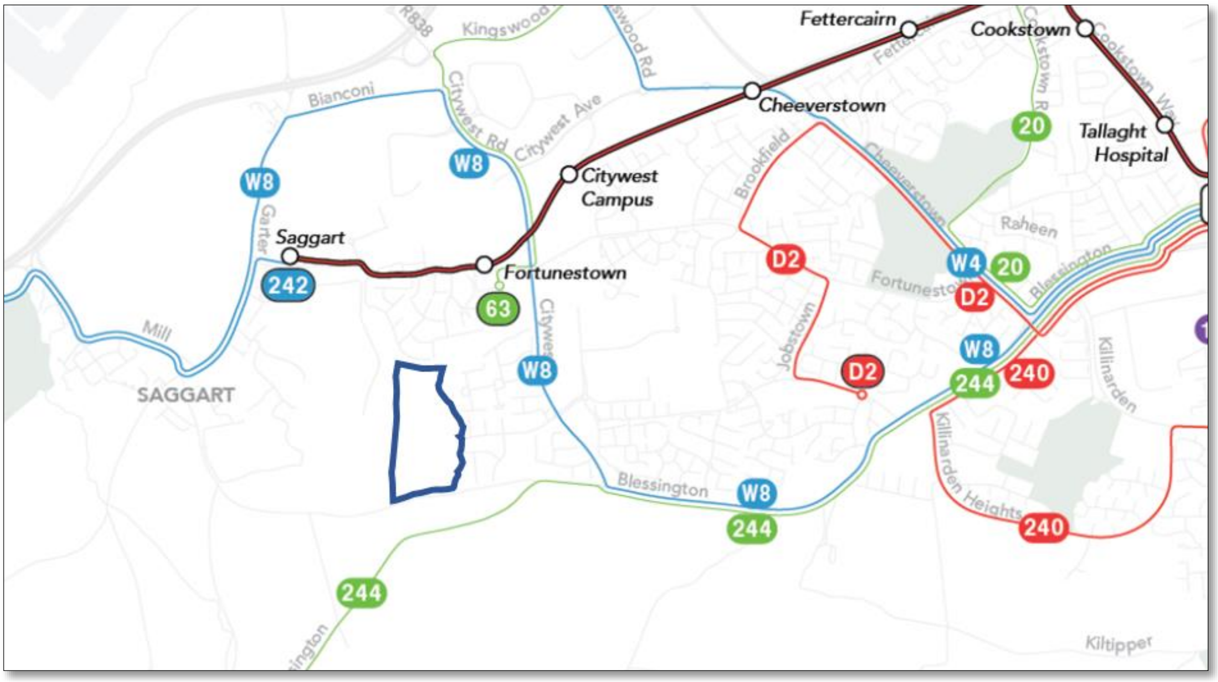

Figure 16 Bus Connects (Source: Map 2 of Bus Connects)

2.7.2 Cycle Network Improvements

Under the National Transport Authority's Cycle Network Plan for the Greater Dublin, the Dublin South-West Sector extends outward from the twin corridors of Camden Street and Clanbrassil Street in the city centre, through the inner suburbs of Rathmines and Harold's Cross, to serve the areas of Terenure, Kimmage, Walkinstown, Tallaght, Firhouse and Rathfarnham. There is considerable overlap between the West and South-West sectors, with interconnecting routes between the two. Some radial cycle routes originate in one sector at the city centre but end up in the neighbouring sector.

In accordance with the National Transport Authority's Cycle Network Plan for the Greater Dublin area the following improvements to the local cycle networks are proposed:

- Route 8A follows Crumlin Road past the Children's Hospital, Bunting Road to Walkinstown, through Ballymount to cross the M50 at Junction 10 and out to Citywest / Fortunestown via Belgard; Route 8B
- Route 9C is an alternative to the Harold's Cross route from Route 8C at Clogher Road via Stannaway Road west of Kimmage and then along Wellington Lane to join Route 9A at Spawell to connect to Tallaght. It also provides a continuation from Route 9A west of Tallaght via Fortunestown and Citywest to Saggart.
- Route 9D would provide a traffic-free option branching off Route 9A at Kimmage Cross Roads and following the River Poddle Greenway to Tymon Park where a new bridge is required over the M50 in the centre of the park to connect with Castletymon Road and rejoin Route 9A. West of Tallaght it provides a loop through Jobstown along the N81 and then northward into Citywest
- Slade Valley Trail: a potential route southward from the villages of Rathcoole and Saggart along the upper reaches of the Camac River to Brittas at the edge of the Dublin Mountains. This route is an alternative to the very busy N81 Blessington Road and opens up access to a network of quiet rural roads in West Wicklow.
- Saggart / Rathcoole / Newcastle: These 3 villages at the south-western edge of the city have grown substantially in recent decades and now form moderately significant dormitories. There is also a large logistics and warehouse park at Greenogue between Rathcoole and Newcastle that attracts trips by staff as well as numerous truck movements. Rural cycle route D5 is shown on Map RN10 as a link between these 3 satellite settlements along the R120 road and onward via city Route 8A to the greater Tallaght area at Fortunestown. This route continues north-westward along the R405 road from Newcastle to Hazelhatch railway station on the Dublin to Cork line, and from there connects into Celbridge in County Kildare. Route D6 links Newcastle northeastward along the R120 road to Grange Castle and onward to either Clondalkin via Route 8C2 or to Lucan via Route SO7. These two regional roads (R120 and R405) are not comfortable for cycling due to narrow carriageway, bendy alignment and busy traffic including many trucks. Segregated cycle tracks would be required.

The proposed cycle routes are illustrated in Figure 17 below.

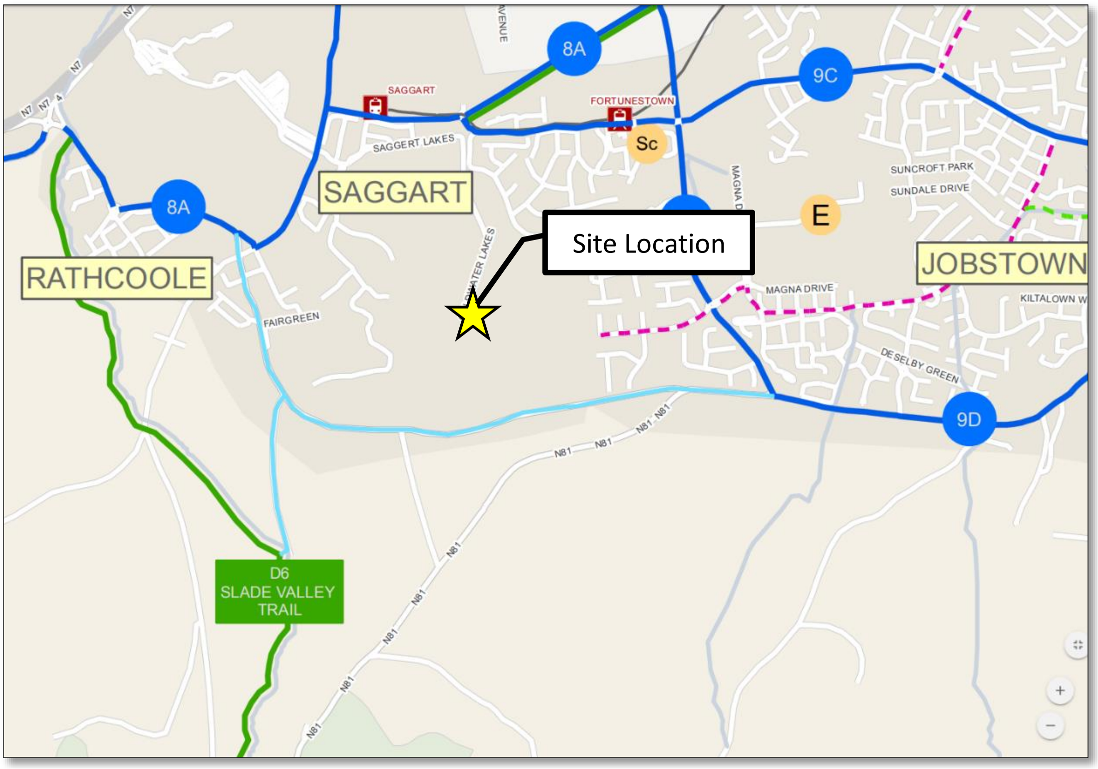

Figure 17 Proposed Cycle Network Upgrades (Source: NTA)

2.7.3 Road Improvement Schemes

2.7.3.1 Citywest Avenue Extension

The Fortunestown Local Area Plan (2012) includes an objective "AM10" for the provision of a new Primary Road which will run in an east-west direction from Fortunestown Way to Citywest Road. This is illustrated in Figure 18 below.

Objective AM10 states:

"That Citywest Avenue (and its extension when constructed) will act as a primary movement corridor that bypasses the District Centre and allows the junction between Fortunestown Way/Lane and Citywest Road to be upgraded to a pedestrian and cyclist friendly junction."

A significant section of the Citywest Avenue Road was completed under Reg. Ref. SD/04A/0099. The remaining section is proposed to be completed as part of the approved Cooldown Commons Strategic Housing Development scheme Reg. Ref. Pl. Ref. SHD3ABP-302398-18.

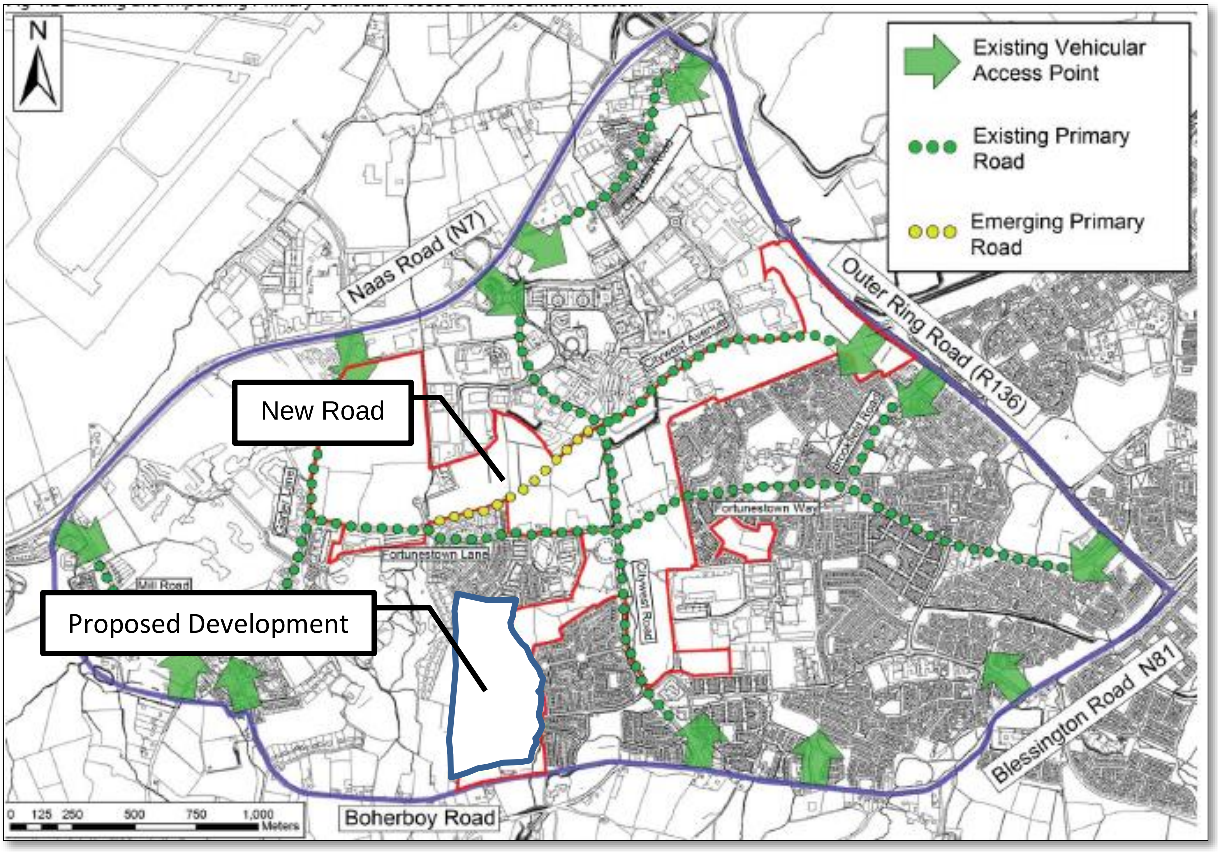

Figure 18 Proposed Road Infrastructure (Extract of Fig 4.2 Fortunestown LAP)

2.7.3.2 N81 Upgrade

Kildare NRDO recently published a route corridor option for the N81 Hollywood Cross to Tallaght Road Improvement Scheme. The road improvement scheme was not included in the Government's Capital Investment Plan (CIP), which provides the financial and strategic framework for TII's activities until 2021.

During the route selection process, the Applicant met with Kildare NRDO to discuss options and how it may affect either project. The Applicant is not proposing any changes to the carriageways of the N81 or Boherboy Road. Therefore, there is the potential to connect into the proposed roundabout on Boherboy Road as part of the Kildare NRDO scheme in the future.

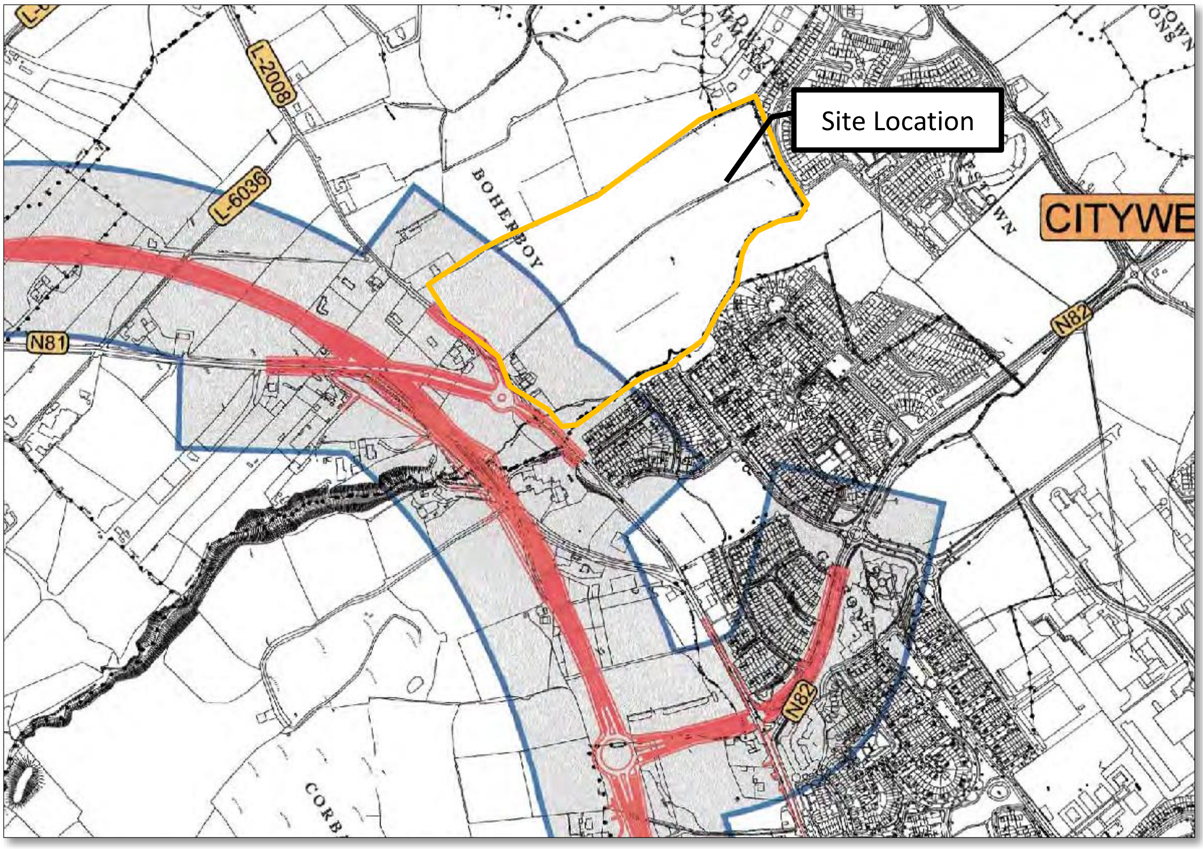

Figure 19 N81 Hollywood Cross to Tallaght Road Improvement Scheme Extract

2.8 Summary

In summary, the existing site benefits from good levels of existing public transport and walking/cycling infrastructure which will assist to encourage sustainable modes of travel for residents and visitors to/from the proposed development.

3 THE PROPOSED DEVELOPMENT

3.1 General

The development will consist of 655 no. dwellings, comprised of 257 no. 2, 3 & 4 bed, 2 & 3 storey detached, semi-detached & terraced houses, 152 no. 1, 2 & 3 bed duplex units in 17 no. 2-3, 3-4 & 4 storey blocks, and 246 no. 1, 2 & 3 bed apartments in 9 no. buildings ranging in height from 2, 2-5, 4-5 & 5 storeys, and a 2 storey crèche (693m²).

Access to the development will by via 3 no. vehicular access point from the Boherboy Road, Corbally Estate, Carrigmore and along with proposed upgrade works to Boherboy Road to include the provision of a roadside footpath along the front of the site at the Boherboy Road, continuing eastwards to the junction with the N81 Blessington Road (for an overall distance of c.370m). The proposed development also provides for pedestrian and cyclist connectivity to the adjoining Carrigmore Park to the north-east, and vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath to the east and Carrigmore Green to the north.

The proposed development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station at the northern end of the site, (ii) public open spaces, including alongside the Corbally Stream, which will accommodate the provision of pedestrian / cyclist links to Carrigmore Park to the north-east, (iii) hard and soft landscaping and boundary treatments, (iv) undercroft, basement & surface car parking (914 no. spaces including EV parking), (v) bicycle parking (797 no. bicycle parking spaces), (vi) bin storage, (vii) public lighting, and (viii) 5 no. ESB sub-stations, all on an overall application site area of 18.3ha. In accordance with the Fortunestown Local Area Plan (2012) an area of approx. 1.42ha within the site is reserved as a future school site.

The site has an area of 18.26Ha.

It is proposed to develop this site based on the following schedule of accommodation: -

Proposed Land Uses	
Land Use	Size
Houses	268
Duplex	152
Apartments	246
Total	**655**

Table 3 Proposed Land Uses

3.2 Site Access

The proposed site access points are illustrated in Figure 20 below.

Figure 20 Proposed Access (Source: Davey Smith Architecture)

Primary vehicular access to the development will be via Boherboy Road (Access No. 1), via Corbally Estate (Access No. 2) and via Carrickmore (Access No. 3).

Pedestrian access will coincide with the vehicular access with additional access points onto Boherboy Road and through the Carrigmore District Park.

3.3 Servicing

An AutoTrack analysis has been carried on the internal service access to demonstrate its capability to cater for residents and service vehicles such as refuse vehicles.

The results of this analysis show that the proposed development can accommodate the anticipated service vehicles that will serve the proposed development.

The auto tracking has been undertaken noting the following from DMURS: Tighter junction radii in accordance with section 4.3.3 of DMURS has been provided. This results in larger vehicles crossing the centre line of the intersecting street or road. Such manoeuvres are acceptable when turning into/or between local or lightly trafficked link streets as keeping vehicle speeds low is of higher priority.

3.4 Car Parking Provision

3.4.1 Car Parking Standards

Table 11.24 'Maximum Parking Rates (Residential Development)' of South Dublin County Council's Development Plan 2016-2022 sets out the car parking requirements for various types of development.

General Parking Standards			
Land Use		**Standards**	
		Z1	*Z2*
Apartment/Duplex	*1 bed*	*1 space*	*0.75 spaces*
	2 bed	*1.25 spaces*	*1 space*
	3 bed+	*1.5 spaces*	*1.25 spaces*
House	*1 bed*	*1 space*	*1 space*
	2 bed	*1.5 spaces*	*1.25 spaces*
	3+ bed	*2 spaces*	*1.5 spaces*
Creche		*1 per classroom*	*0.5 per classroom*

Table 4 Parking Standards

South Dublin County Council's parking standards are described as maximum standards i.e. parking should not be provided over and above the figures outlined in Table 4.

It is the intention of the Applicant to provide car parking for the houses inline with the South Dublin County Council Development Plan Standards.

The 'Sustainable Urban Housing – Design Standards for New Apartments' published by the Department of Housing, Planning and Local Government sets out alternative designer standards for apartments. Under the 'Sustainable Urban Housing – Design Standards for New Apartments', '*the quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria.'*

Therefore, the car parking provision for the site seeks to balance to maximum requirements, as described in the South Dublin County Council Development Plan, and what is sustainable based on the criteria outlined in the 'Sustainable Urban Housing – Design Standards for New Apartments'. This approach will be adopted for both the apartments and duplex in this development.

3.4.2 Car Parking Provision – Creche

At a rate of 1 space per classroom, a total of 8 spaces will be provided for staff of the crèche. An additional 8 spaces will be provided for set down only.

3.4.3 Car Parking Provision - Houses

Parking provision for the houses will be in accordance with table 11.24 'Maximum Parking Rates (Residential Development)' of South Dublin County Council's Development Plan 2016-2022.

For the houses which are located to the south of the development lands, it is assumed that a medium level service level in terms of bus and Luas service applies, given the walking distance between each one is greater than 800m.

Therefore, it is assumed that the site is in Zone 1. South Dublin County Council Development Plan Parking standards are provided in Table 4 above.

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Schedule of Accommodation	
Land Use	Standards
House 3 Bed +	*249*
Houses 2 Bed	*8*
Total	***257***

Table 5 Schedule of Accommodation

Based on the schedule above, the applicable rates of car parking have been applied to each housing type as illustrated in Table 6.

Parking Provision			
Land Use	No.	Standards	Provided
House 3 Bed +	*249*	498	488
Houses 2 Bed	*8*	12	12
Total		***510***	***500***

Table 6 Parking Provision - Houses

A total of 500 spaces for the houses will be provided in this development for the houses.

3.4.4 Car Parking Standards – Duplex

The ‘Sustainable Urban Housing – Design Standards for New Apartments’ published by the Department of Housing, Planning and Local Government sets out alternative designer standards for apartments.

The new design standard sets out alternative criteria for the provision of car parking spaces based on the link between the proposed development, access to local amenities and access to public transport.

The apartment blocks are located in Zone 1. A comparison between development plan standards and the new apartment guidelines is illustrated in the tables below.

Car Parking Standards – Duplex			
Land Use		**Standards**	
		Development Plan Standards (Zone 1)	‘Sustainable Urban Housing – Design Standards for New Apartments’ DoECLG (2020)
Duplex	1 Bed	*1 space*	Depends on Design & Location
	2 Bed	*1.25 space*	

Car Parking Standards – Duplex			
	3 Bed	*1.5 spaces*	
Visitors		-	1 space per 4 units

Table 7 Parking Standards

Car Parking Provision - Duplex			
No. of Units		**Standards**	
		Development Plan Standard	'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020)
I Bed	4	3	152
2 Bed	72	90	
3 Bed	76	114	
Visitor		-	38
Total		208	**190**

Table 8 Parking Provided

A total of 190 spaces for the duplexes will be provided in this development. This equates to c. 1 spaces per unit and 38 visitor spaces.

3.4.5 Car Parking Standards – Apartment

Again, The 'Sustainable Urban Housing – Design Standards for New Apartments' published by the Department of Housing, Planning and Local Government will be used to assess the parking demand for the apartment elements of the development.

Given the location of the apartment blocks relative to the Luas stop at Fortunestown, it is assumed that the apartment blocks are located in Zone 1. A comparison between development plan standards and the new apartment guidelines is illustrated in Table 9 & 10 below.

General Parking Standards			
Land Use		**Standards**	
		Z1	*Z2*
Apartment/Duplex	*1 bed*	*1 space*	*0.75 spaces*
	2 bed	*1.25 spaces*	*1 space*
	3 bed+	*1.5 spaces*	*1.25 spaces*

Table 9 Parking Standards

Car Parking Provision - Apartment				
Type	**No.**	**Standards**		
		Zone		DoECLG (2020)
		Z1	Z2	
I Bed	62	18	33	184
2 Bed	177	33	151	
3 Bed	7	2	8	
Visitor		-		24
Sub Total		52	192	208
Total		**244**		**208**

Table 10 Parking Provided

It is proposed to provide 208 spaces for the apartment element of the proposed development. This equates to c. 0.85 spaces per unit.

3.4.6 Justification of Apartment/Duplex Parking

Based on the guidance outlined in 'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) car parking spaces will be provided on the following basis:

General car parking spaces - Apartments	184
General car parking spaces - Duplex	152
Visitor	62
Total:	**398**

The 'Sustainable Urban Housing – Design Standards for New Apartments' published by the Department of Housing, Planning and Local Government (2020) determines the car parking requirements '*having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria*' based on the following designations

- Central and/or Accessible Urban Locations;
- Intermediate Urban Locations; and
- Peripheral and/or Less Accessible Urban Locations.

A Central and/or Accessible Urban Locations are defined by larger scale and higher density developments, comprising wholly of apartments in more central locations that are well served by public transport where the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances.

Intermediate Urban Locations are defined as suburban/urban locations that are served by public transport or close to town centres or employment areas and particularly for housing schemes with more than 45 dwellings per hectare net (18 per acre). In such instances planning authorities are encouraged to consider a reduced overall car parking standard and apply an appropriate maximum car parking standard.

Peripheral and/or Less Accessible Urban Location are defined by locations that are peripheral or less accessible urban locations where one car parking space per unit, together with an element of visitor parking, such as one space for every 3-4 apartments, should generally be required.

For the purpose of this application, the development is considered as Central and/or Accessible Urban Locations given its proximity to Citywest Business Campus and 10 minute walking distance to the Luas stop located on Fortunestown Lane. .

Public Transport

Fotutnestown Lane Luas stop is located c. 10 minutes walking distance from the development through Carrigmore Estate.

Density

The proposed development comprises 655 houses, apartments and duplex providing a density of net 35.9 dwelling units per hectare (site area of 18.26hectares).

Site Classification

For the purpose of this application, the development is considered as a Intermediate Urban Location.

As apartment and duplex elements of this development are well served by public transport, the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances. The policies above would be particularly applicable in highly accessible areas such as this as it is at confluence of public transport systems i.e. Luas.

The development is c. 15 minutes walking distance of centrally located employment locations i.e. Citywest Business Campus. It is also c. 10 minutes walking distance of a Luas stops.

Therefore, it is justified to provide 398 car parking spaces for 398 units.

3.4.7 Car Clubs

'Sustainable Urban Housing – Design Standards for New Apartments' published by the Department of Housing, Planning and Local Government (2020) recommends the following:

'As well as showing that a site is sufficiently well located in relation to employment, amenities and services, it is important that access to a car sharing club or other non-car based modes of transport are available and/or can be provided to meet the needs of residents, whether as part of the proposed development, or otherwise. 'Car free' development is permissible and if developed, must be fully communicated as part of subsequent apartment sales and marketing processes. '

Car Clubs gives you a 'car on call', whenever you need it. Car clubs have developed as a modern service in many European cities and are a good alternative to high levels of private car use and 'driver only' occupancy rates. The principal of a car club is to ensure that the optimal use of a small number of vehicles to meet the needs of a wide group of people.

International experience to date shows that healthy car clubs, such as those run by GoCar, operate at a provision of 30 clients per car and every car can replace up to 4 private vehicles thereby significantly reducing the number of traffic movements.

In addition, restricting car parking provision is a recognised method of reducing car dependence of a development.

Figure 21 GoCar Location

City Council commuter data was compared to GoCar Member Data as illustrated below. This data shows how the modal choice can change if an alternative option is available. The availability of car clubs leads to a more sustainable choice for individuals.

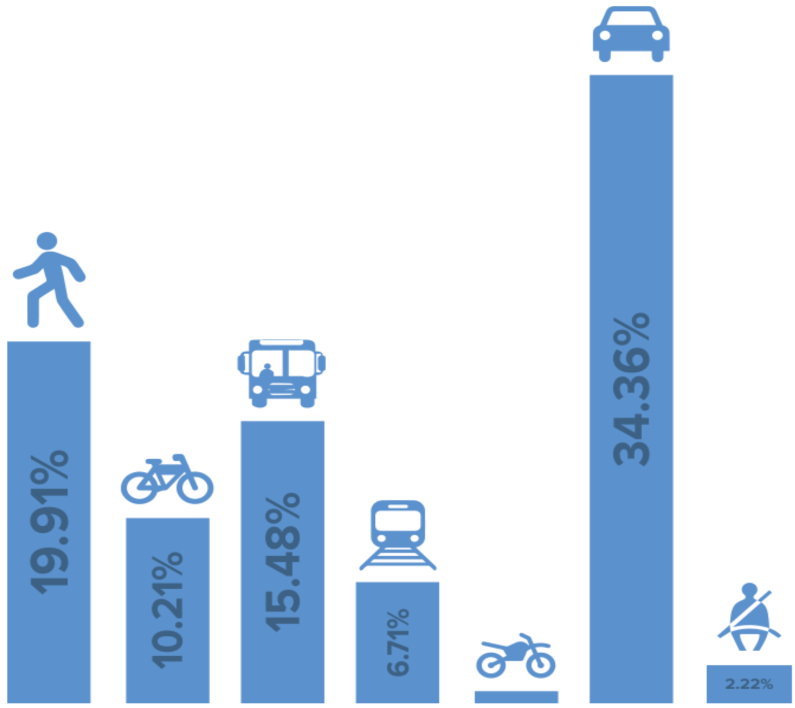


Figure 22 DCC Commuter Census Data

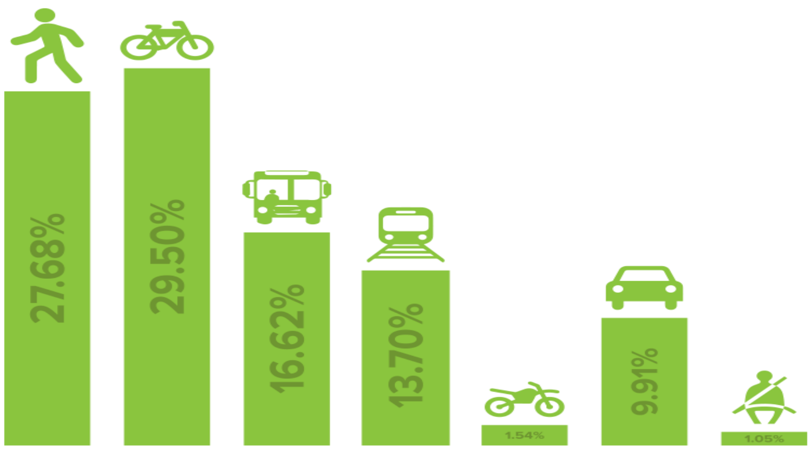


Figure 23 GoCar Member Survey Commuter Data

GoCar has carried out research on GoCar Members and Smart Travel Users. The findings of the GoCar survey are summarised below:

- 80% of users do not own a car;

- Over 60% use public transport at least once a week
- Over 50% cycle at least one a week;
- Over 40% said that if GoCar did not exist, they would buy a car; and
- Over 50% cycle at least one a week.

Cars can be booked in advance through their app and/or website.

It is the experience of GoCar that the demand for spaces become self-regulating. Members will book in advance for planned trips. Should spaces on site not be available at short notice, members will try other locations.

Should members not find a car that is convenient the trip is either postponed to a later date or alternative modes of transport are sought as per the GoCar Member Survey Commuter Data.

The above will help reinforce the multimodality mind set and ensure that people take the best decision depending on the transportation needs.

In addition, restricting car parking provision is a recognised method of reducing car dependence of a development.

3.4.8 Car Parking – Summary

A total of 914 parking spaces will be provided for the development.

Parking will be provided within the curtilage of each house. On street surface car parking will be provided for the apartments, duplexes, creches and visitor car parking spaces.

The development plan standard suggests a total of 398 spaces for the Apartment/Duplex element of the proposed development.

Without car parking dominating the proposal and taking into account the guidance set out in publications like DMURS and 'Sustainable Urban Housing – Design Standards for New Apartments' it was proposed to provide 398 spaces for the apartment blocks and duplex.

This level of parking will both meet the demand for spaces but will also act as demand management tool for trips to/from the proposed development.

Therefore, a balance has been struck for the car parking provision taking into account the Development Plan standard and the anticipated demand.

Overall Parking Provision	
Land Use	**Standards Provided**
Houses	500
Apartments	208
Duplex	190
Creche	16
Total	***914***

Table 11 Overall Parking Provision

The reduction in car parking spaces for the duplex unit/apartment units will have many benefits including the following:

- Less congestion and therefore improved safety on local roads by promoting alternatives to the car;
- Reduced highway capacity problems by promoting sustainable travel choices;
- Local environmental improvements from reduced congestion, carbon emissions, pollution and noise;
- Making the site more attractive to potential occupiers/users;
- Increased opportunities for active healthy travel, such as walking and cycling
- Reduced demand for parking spaces enabling land to be put to more cost effective or commercially beneficial use and freeing space for active travel initiatives; and
- Improved travel choice, quality and affordable access to services for all users.

3.5 Cycle Parking Standards

Table 11.22 ‘Minimum Bicycle Parking Rates’ of South Dublin County Council’s Development Plan 2016-2022 sets out the cycle parking requirements for various types of development.

Cycle parking standards are described in terms of long term and short-term use.

Cycle Parking Standards		
Land Use	Standards	
	Long Term	Short Stay
Residential Apartment	1 per 5 apartments	1 per 10 apartments
Creche	1 space per 5 Staff	1 space per 10 children

Table 12 Cycle Parking Standards

The quantum of cycle in accordance with the Development Plan standard is illustrated in Figure 13.

Cycle Parking Provision			
Land Use		Standards	
		Long Stay	Short Stay
Apartment	246	49	25

Duplex	152	30	15
Crèche		5	15
Sub Total		84	55
Total		**139**	

Table 13 Cycle Parking Provision

Under Table 11.22 'Minimum Bicycle Parking Rates' of South Dublin County Council's Development Plan 2016-2022 a total of 139 cycle spaces are required.

Given that the 'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) has been applied to the car parking provision for the apartments and duplex, the quantum of cycle parking required to meet the standards has been calculated. Refer to Table 14 below.

Cycle Parking Provision				
Land Use			Standards	
	Unit Type	N0.		
Apartment	One Bed	62	61	
	Two Bed	177	354	
	Three Bed	7	21	
Duplex	One Bed	4	4	
	Two Bed	72	144	
	Three Bed	76	228	
Crèche			Long Stay	Short Stay
			5	15
Total			833	

Table 14 Cycle Parking Provision - Apartment Guidelines

South Dublin County Council's Development Plan 2016-2022 a total of 139 cycle spaces are required. The Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) suggests 833 spaces should be provided.

This development has sought to reduce the number of car parking spaces overall. The 'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) states that where it is sought to reduce car parking provision in apartment schemes, it must be demonstrated that other non-car based modes of transport can meet the needs of residents, whether in full or in part, additional secure, covered cycle parking provision will be necessary.

Given that car parking is provided at c. 0.8 spaces per unit, it's the provision of cycle spaces should be greater than the South Dublin County Council's Development Plan 2016-2022 requirement but less than the 'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) requirement. Therefore, 797 cycle spaces will be provided.

'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) suggests, as a benchmark guideline for apartments, an absolute minimum of one secure, covered bicycle parking space per unit should be required. This benchmark has been provided.

It is concluded that the provision of 797 cycle spaces will meet the demand of local residents.

3.6 Pedestrian and Cycle networks

3.6.1 Introduction

It is a necessary part of the design framework for a residential development such as this to ensure that there is good permeability for those residents and visitors to the development who choose not to travel by car. The development has been designed to ensure that there is good permeability for pedestrians and cyclists. Connections between the internal layout and the external pedestrian and cycle networks form part of the overall access strategy for the site. With this development pedestrian movement is suitably catered for by footpath connections within and adjacent to the development up to the relevant boundaries i.e. through Carrigmore Estate, Carrigmore District Park and Corbally Estate. These provide good linkage to the surrounding urban areas.

The internal layout demands that all visitors to the site are catered for and so pedestrian routes between dwelling areas and key nodes within the layout are well designed and clearly delineated. This applicant is very experienced in creating safe environments that satisfy resident's requirements and convenience. Accordingly, every effort has been made to ensure that vehicular access will be restricted in areas where there are likely to be the highest concentrations of pedestrian/cycle movements.

The internal site layout will include several crossing facilities that are located along key desire lines and which coordinate well with the proposed car parking layouts to enhance the safety, visibility and convenience of those people on foot. These facilities will include features such as tactile paving and surface treatments that will benefit all users and assist those with impaired mobility.

Pedestrian linkage will be provided to the boundary of the local estates such as Corbally and Carrickmore residential developments and other future developments as part of the development. Pedestrian linkage to the lands that form part of the South Dublin County Council's Development Plan 2016-2022 (and subsequent Local Area Plans) will be provided as part of subsequent stages of development.

Given the desire in current planning guidance to improve accessibility for non-car modes of travel, access by bicycle is increasingly important. Since the weather and topography inevitably have an influence on cycle use, the key to cycle accessibility is the existence of convenient and safe links associated with secure and carefully sited cycle parking.

3.6.2 Access Across the Stream

The SSFRA , prepared by Killgallen. analysis determined that the top water level from the 100-year event at the lower northern end of the site as 118.84mOD. The Flood Risk Management Guidelines recommends that a freeboard of 500mm and 250mm be applied for the Q100 event for floors and roads respectively.

Pedestrian and vehicular access connections between the proposed development to Carrigmore, Corbally and the District Park have been set above the minimum soffit levels as illustrated in the table below.

Crossing Details			
Crossing	**1.0% AEP Water Level (m OD)**	**Min. Soffit Level m OD**	**Crossing Level m OD**
1	118.84m	119.44m	120.25m
2	120.29m	120.79m	121.75m
3	124.64m	125.14m	125.85m
4	132.88m	133.38m	134.70m

Table 15 Crossing Details (Source: Kilgallen & Partners Consulting Engineers)

3.6.3 Facilities and access for those with impaired mobility

The design has sought to ensure that the environment created within this development will be accessible to residents and visitors with disabilities. Footpaths will be designed in accordance with the latest design criteria to ensure safe access for those that have a mobility impairment.

4 BOHERBOY ROAD UPGRAGE

4.1 Background

As part of the previous application on this site (Ref. ABP-304828-19), the Inspector raised concerns in relation to the suitability of Boherboy Road to accommodate the development in its entirety. These concerns are summarised below:

1. Access & Traffic Related Issues

ABP Inspector had major concerns relating to the proposed upgrade works to Boherboy Road i.e. who was going to deliver it?

Concerns were raised regarding the appropriateness of the Boherboy Road to facilitate a development of this scale, such as "the road is substandard in width and alignment, and would in my view, require significant upgrade to facilitate a development of this scale. This is confirmed in the Planning Authority Report and it is detailed that the preferred option would be that entry to the site is provided to the north and east of the site and the principal vehicular/egress points are not solely at the Boherboy Road".

Despite all of the submitted details, the ABP Inspector had "significant concerns regarding the suitability and capacity of the Boherboy Road to provide appropriate access to the subject site. It has been clearly stated by South Dublin County Council that it is not intended to carry out any road improvements to this road. The applicant puts forward proposed improvements to enhance the capacity of the N81/Boherboy Road junction. However, no clarity is provided as to how such works would be funded or implemented. There is no certainty that this necessary road improvement can be delivered and in the absence of same, I am not satisfied that the development would not give rise to adverse congestion".

The applicant has not secured the necessary consent to provide any alternative access points to the north or east through the Carrigmore or Corbally Estates.

I consider the access arrangements to the site deficient and that the Boherboy Road does not have capacity to cater for a development of this scale and intensity.

The Quality Audit submitted also notes some concerns regarding the existing condition of the Boherboy Road and whether it will sufficiently cater for a development of this size. I consider, therefore, that the proposed development would endanger public safety by reason of a traffic hazard".

2. Traffic Impact Assessment (TIA)

In relation to the TIA submitted, the ABP Inspector stated that she had "concerns regarding the accuracy of the traffic generation figures presented. Given the quantum of housing and extent of car parking proposed, it is likely in my view, that trip generation figures may well be higher" and she considered this "a significant deficit in the analysis".

She states that "notwithstanding the quantitative data presented, Boherboy Road is a substandard rural road with a single carriage way, no footpaths or hard margin. Given the lack of vehicular connections and permeability for vehicular traffic through the site, it is likely that trip generation figures may well be much higher than are presented. I note no assessment is carried out for when the school site is operational. The development will generate significant additional traffic and it is evident that road improvement works including the N81 junction are necessary to facilitate the development. Such works are on lands outside of the control of the applicant and there is no surety that they can be delivered".

I note no assessment is carried out for when the school site is operational.'

These concerns will be addressed below.

4.2 Site Meeting

In order to agree the specifics of the Boherboy Road upgrade a meeting was held with the Willie Purcell, Senior Executive Engineer, Land Use Planning & Transportation (now retired), South Dublin County Council, on the 19th of June 2020.

This meeting was attended by:

- Patrick Kelly, Kelland Homes
- Brian Cummins, Kelland Homes
- Willie Purcell, South Dublin County Council
- Ronan Kearns, Pinnacle Engineering

A summary of what was agreed on site is outlined in Section 4.3 below.

4.3 Proposals

The following is the agreed proposals for the Boherboy Road Upgrade:

- 6m carriageway is to be provided from N81 to a point c. 400m west of site
- Public lighting is to be installed on existing ESB poles from Chainage 445 to Chainage 0 and to continue further along the road to Saggart until linking with the existing public lighting. First light will be installed at a point to be determined (located within 35m of an existing light ideally). Final design to be confirmed on site.
- No footpath, public lighting or drainage will be installed between Chainage 0 and Chainage 445. Pinnacle to justify this through permeability drawing. Streetlamps will be installed on existing ESB poles as mentioned above.
- Public lighting, drainage and kerb to be installed from Chainage 445 to Chainage 750. Public footpath will be built inside the site along this chainage.
- From Chainage 750 to Chainage 1120, drainage will be installed in the public highway and not under the footpath. The road will be reinstated as required.
- Public lighting, drainage and a 1.8m footpath will be installed from Chainage 750 to Chainage 1120
- The northern tree line from Chainage 445 to Chainage 1120 will have to be removed to facilitate these works
- The southern tree line will remain insitu
- SDCC are still on track to deliver Carrigmore TIC (Now taken in charge)
- SDCC will provide a letter to Davy Hickey that should they offer the remainder of Corbally for TIC it will be done subject to Davy Hickey providing necessary TIC information.
- SDCC will give us a letter of consent for the works from Chainage 445 to Chainage 1120 which will be included in the red line boundary
- SDCC will give Applicants a letter of consent for carrying out work on Boherboy Road
- Applicant's working on the basis that 3 No. vehicular access will be provided (Carrigmore, Corbally and Boherboy Road) and pedestrian/cycle routes through same as well as the District Park
- Landscape Architect to speak to Parks Department regarding trees along Boherboy Road

- Armstrong Fenton to continue research into previous County Development Plans and the envisaged connectivity through the site from Corbally and Carrigmore
- Contributions/offsets to be discussed separately. SDCC suggested that this is included in the application to allow ABP to adjudicate on it i.e. Applicants to outline what they are willing to pay and ABP will decide Existing gullies remain in situ.

These proposals are illustrated in the following drawings:

- P200107-PIN-XX-DR-D-0001-S1-'Key Plan'
- P200107-PIN-XX-DR-D-0010-S1-'External Works'
- P200107-PIN-XX-DR-D-0011-S1-'External Works'
- P200107-PIN-XX-DR-D-0012-S1-'External Works'
- P200107-PIN-XX-DR-D-0013-S1-'External Works'
- P200107-PIN-XX-DR-D-0013-S1-'Off Site Works'
- P200107-PIN-XX-DR-D-0014-S1-'External Works'

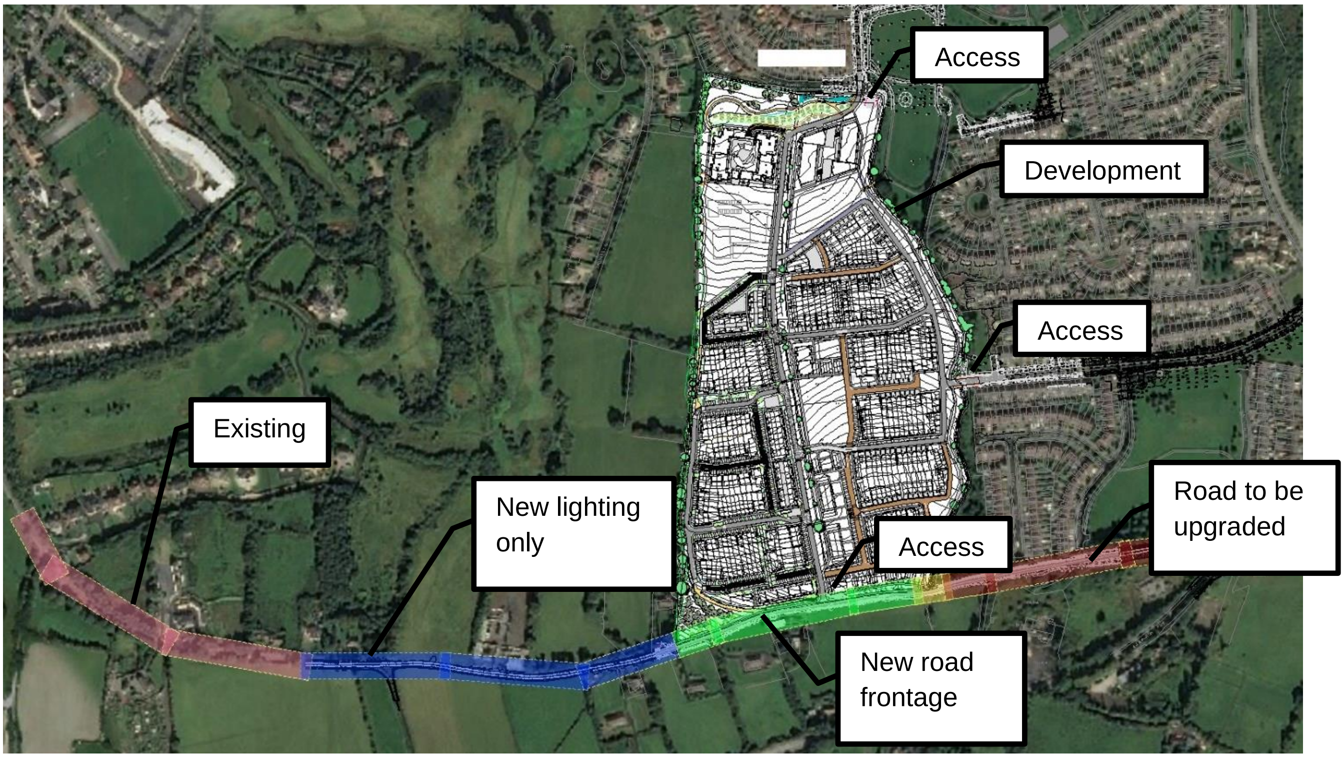


Figure 24 External Works

4.4 Consents

The Applicants have consents to make the connections from the development to Carrigmore (via lands taken in charge by South Dublin County Council) and Corbally estates.

5 TRAFFIC GENERATION AND DISTRIBUTION

5.1 General

The methodology for assessing the traffic implications of this development involves quantifying the number and nature of trips that would be generated and reviewing these trips in the context of the prevailing conditions, the area of influence and the available infrastructure.

The nature of the development and its relative location to the catchment dictates that the modal choice to and from the site would primarily be via private car but with some elements of public transport use.

Accordingly, the development will attract private car, pedestrian and cycle visitation that will need to be catered for in terms of access routes and internal design. Visitation will also include residents and visitors using public transport connections.

A significant factor in trip attraction and hence resultant impact on the surrounding network is the relationship between trips that already utilise the road network which would choose to visit the development and those trips which would be newly generated onto the road network by the creation of the development in this location.

Research into trips associated with developments of this type has been extensive and in order to try and determine a realistic level of resultant impact the following classifications are adopted.

Primary New trip ~ a single purpose trip (such as development-work-development) that would not exist on the network prior to the opening of the development.

Primary Transfer trip ~ an existing single purpose trip to another destination (such as another similar development) that would transfer to the new development once it becomes operational.

Non-Primary Diverted trip ~ an existing multi-purpose (linked) trip that involves deviating from the normal route in order to visit the new development whilst on the way to another destination.

Non-Primary Pass-By trip ~ an existing multi-purpose (linked) trip that arises from visiting the new development without having to deviate significantly from the existing route being taken.

A Primary trip is one which has the same origin on visiting the site as destination when leaving the site, but only a proportion of these are newly generated (i.e. would not have taken place if the development didn’t exist). The remainder of primary trips already exist on the road network as they would be those visiting another similar but existing destination.

A pass-by trip is a form of trip that doesn’t result in any additional load to the impact area, since it already exists on the network adjacent to the site.

For the purpose of this assessment, it is assumed that the proposed development will generate primary new trips.

5.2 TRICS

The Trip Rate Information Computer System [TRICS] database has been interrogated to derive trip rates commensurate with developments of the character proposed in this case, notably a 628-unit residential development and school site.

The use of the TRICS database has also enabled the profile of arrivals and departures throughout the day to be assessed and this has served to confirm the choice of the highest respective peak hours for use in the analyses.

This database is a well-established and constantly updated tool used in the determination of generated traffic for developments since it is a substantial source of validated empirical data on the arrival and departure rates for a range of differing types and sizes of development in a variety of locations.

5.3 Dwellings

Using the TRICS database, the rip rates for houses was calculated. These trip rates are illustrated in Table 16 below.

Peak Hour Trip Rates					
Trip Generation from TRICS		**Weekday AM 08:00-09:00**		**Weekday PM 17:00-18:00**	
Usage	**Units**	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Houses	Per Unit	0.204	0.591	0.476	0.249
Apartment/Duplex	Per Unit	0.061	0.248	0.185	0.055

Table 16 House Trip Rates

Note the above trip rates are higher than those submitted at the Pre Planning Tripartite Meeting with An Bord Pleanála and South Dublin County Council. This is based on feedback provided through An Bord Pleanála opinion.

5.4 School Site

5.4.1 Trip Rates

Part of the wider Boherboy lands include a future school site.

Typically, the Department of Education has a requirement for schools with between 6 to 24 classrooms. It is understood, through the negotiations pertaining to the design of the site, that the site has been earmarked for a 16-classroom primary school.

According to the Department of Education, the Average Class Size in Primary Schools (2014/15 - 2018/19) ranges from 24.9 to 24.3 with an overall downward trend. Based on an average of 24 pupils per classroom there is a potential pupil population of 384.

According to the Census 2016 Summary Results - Part 1 published by the CSO, the average household size is 2.75. Census 2016 shows the population of the primary school age group (5-12) stood at 548,693. Census 2016 results show that Ireland's population stood at 4,761,865. Therefore, the primary school age group (5-12) equates to 11.5% of the overall population.

Based on 655 total units, it is estimated that up to 198 children from within the development will be of primary school going age.

Anticipated Number of Local Students			
Number of Units	**Persons per dwelling**	**Total Population**	**Primary School Children Age**
628	2.75	1,727	194

Table 17 Anticipated Number of Local Students

Based on a 16-classroom primary school, up to 384 students could be accommodated. There is the potential for up to 194 local students to cycle/walk to the school site from within the proposed development. Therefore, the total external school population would be up to 194 pupils.

It is reasonable to assume that not all local children from the proposed development will attend the local school. These trips will be included in the overall trip rate generated by the development and will be classed as link trip. These trips will have no additional impact on the external network.

The remainder of the students will have their origin outside the development. Accordingly, school site will be tested for an external pupil population of 190.

These assumptions will attract higher trips to the proposed development as the external population is bigger and therefore offers a robust assessment of the potential trip rates to/from the school site via the external road network.

5.4.2 Trip Rates

Using the TRICS database, the rip rates for a primary school was calculated. These trip rates are illustrated in Table 18 below.

Peak Hour Trip Rates					
Trip Generation from TRICS		**Weekday AM 08:00-09:00**		**Weekday PM 17:00-18:00**	
Usage	**Units**	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Primary School	Per Pupil	0.176	0.094	0.022	0.019

Table 18 School Trip Rates

5.5 Trip Attraction

The chosen trip rates for the proposed development are outlined in Table 19 below.

Peak Hour Trip Rates					
Trip Generation from TRICS		**Weekday AM 08:00-09:00**		**Weekday PM 17:00-18:00**	
Usage	**Units**	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Houses	Per Unit	0.204	0.591	0.476	0.249
Apartments	Per Unit	0.061	0.248	0.185	0.055
Primary School	Per pupil	0.176	0.094	0.022	0.019

Table 19 Peak Hour Trip Rates

These trip rates are used in conjunction with the proposed schedule of accommodation to determine the resultant total trips generated by the proposed development.

For the proposed development, these figures can be seen in Table 20 below.

Peak Hour Trips					
Trip Generation from TRICS		**Weekday AM 08:00-09:00**		**Weekday PM 17:00-18:00**	
Usage	**Units**	**Arrivals**	**Departures**	**Arrivals**	**Departures**
House[1]	257	52	152	122	64
Apartments/Duplex[1]	398	24	66	44	22
Peak Total		**77**	**251**	**196**	**86**
Two Way Total		327		282	
School[2]	190	34	18	4	4

Table 20 Peak Hour Trips

[1] To be used in development flows.

[2] To be used in baseline flows only.

It can be seen from the above that the total vehicle movements generated by the proposed development will be 77 arrivals and 251 departures in the AM peak (two-way total of 327). The total number of vehicle movements in the PM peak hour will be 196 arrivals and 86 departures (two-way total of 282).

Note the above does not take into account the reduced car parking provision, as outlined in Section 3.4. The above trip rates assume no restriction in car parking numbers and will produce a higher number of trips compared when parking is restricted. Restricting parking numbers is a well-known demand management tool.

The above trip rates were used in the junction modelling so as to offer a robust assessment of the development impact.

5.6 Baseline

These baseline conditions need to be established accurately to understand fully the context of this development proposal and other developments that are built but not yet occupied or those likely to be built during the lifetime of this development.

To determine the baseline transport data reference has been made to the following:

- The quantification of the vehicular trips generated from adjoining developments and their modal distribution, or, where the site is vacant or partially vacant, the vehicular trips which might realistically be generated by any extant planning permission or permitted uses;
- Current traffic flows on links and at junctions within the study area; and
- Zoned lands such as the school site

To that end, the baseline data for the development is based on the combined flows identified in the traffic surveys, the flows predicted in Section 2.6 and the flows estimated for the lands reserved for the school site.

6 Junction Analysis

6.1 Introduction

To assess the resultant impact on the surrounding road network, the anticipated traffic generation and distribution through the network has been applied to the traffic model in order to assess comparative flow levels at the surveyed locations and to analyse resultant junction performance.

In addition to traffic generated due to the proposed development, there is also an expected increase in traffic flows due to general development and an increase in car ownership that needs to be considered. Using Table 5.5.1 of the Project Appraisal Guidelines – Unit 5.5 Link-Based Traffic Growth Forecasting published by the NRA, reference has been made to the percentage increase expected on all roads surrounding the site.

6.2 Growth Factors

The estimated opening year for the proposed development is 2027. This has therefore been the focus of the road network assessment. These flows are shown in Appendix C and for the weekday AM and PM peaks respectively.

NRA PAG Unit 5.5 sets out growth rates for forecasting future traffic. It is noted that in respect Dublin County (Fingal South Dublin Dun Laoghaire Rathdown) the growth during the period 2006-2027 is set at 0.5% per annum for medium growth decreasing to 0.4% for the period 2026 onwards (LV rates used).

The factor used is outlined below:

Traffic Growth Rates, NRA Project Appraisal Guidelines		
Year	To Year	Table 5.5.1
2020	2027	1.0938
2020	2032	1.1416
2020	2042	1.1796

Table 21 Growth Factors

These growth rates are applicable to Dublin County (Fingal South Dublin Dun Laoghaire Rathdown) and no distinction is offered between rural and urban locations. It has been assumed that medium growth would occur.

The use of these rates in this urban location is highly conservative as the predicted traffic growth is not likely to occur in built up urban locations, such as South Dublin, with good public transport in the future. However, the rates have been applied in the interests of providing a robust assessment of the performance of the road network in the future.

6.3 Junction Capacity Analyses

Junction capacity analyses have been undertaken at the site access junction and at the key junctions at which existing flow data had been obtained. These tests have been carried out using industry standard and approved software for the existing junctions with no development and the assumed year of opening of the development, namely 2027, and for a 5-year design horizon, namely 2032 and for a

15-year design horizon, namely 2042 with development flows added. It may be the case at some nodes within the network that following the distribution and assignment of the traffic generated by the development, the actual proportional impact or change in traffic demand would not necessarily warrant further assessment. For the purpose of a robust assessment, all junctions have been put forward for assessment.

The use of the TRL capacity model programme PICADY [Priority Intersection Capacity and Delay] is well established and accepted by the South Dublin Council for the prediction of capacity and incurred delay at priority junctions, whilst ARCADY [Assessment of Roundabout Capacity and Delay] is similarly accepted and used to provide comparable measures of the operational efficiency of roundabout junctions. OSCADY (Optimised Signal Capacity and Delay: Phase-based Rapid Optimisation) is a computer program for optimising phase-based signal timings and calculating capacities, queue lengths and delays (both queuing and geometric) for traffic signal-controlled junctions. Similarly, LinSig is a computer program for optimising phase-based signal timings and calculating capacities, queue lengths and delays (both queuing and geometric) for traffic signal-controlled junctions.

With these well-established methods the results are expressed in terms of a ratio of flow to capacity (RFC) on each approach and the maximum queue length on that approach during the period tested. If the RFC value approaches 1.0 then queuing and delay can be expected to increase. It is normal practice to ensure that the RFC is below 0.85 to achieve a theoretical reserve capacity of greater than 15%, although a value of 0.85 can be marginally exceeded in a future design year situation without any detrimental effect on the satisfactory and safe operation of the junction.

LinSig and OSCADY results are expressed in terms of queues generated and the ‘Degree of Saturation’ (DoS). A Dos value of 85% or below indicates that the junction is operating within capacity. A DoS value of between 85% and 100% indicates that the junction remains within capacity but is beginning to show signs of queuing and delay. A DoS value of less than 100% is desirable in urban areas during peak period traffic. However, values of greater than 100% are typical at many junctions. For the purpose of these calculations the results are reported in terms of maximising the capacity of the junction analysed.

The results of the various capacity assessments are summarised in a series of tables. For each flow condition and for each junction the PICADY or ARCADY output has been assessed and the maximum Ratio of flow to Capacity [RFC] tabulated together with the maximum (end) queue value for the relevant time segment. For signalised junctions the OSCADY/ LinSig output will be in terms of maximum (end) queue value and DoS.

6.4 Geometric Parameters

The geometric parameters used for the junctions have been ascertained from the topographical survey details of the junction and other relevant sources such as OS mapping. In this way a very good approximation of the relevant geometric inputs has been used. For the proposed junction, the geometry has been obtained by reference to the initial design drawing. This has also enabled an iterative process to be adopted, if necessary, to ensure that the junction is designed in accordance with relevant design standards and to achieve enough levels of capacity.

In this case, the surveyed junctions will each be analysed to determine the extent of resultant highway impact and the need, if any, for mitigating measures. It is anticipated that the capacity analyses will show how the proposal will be accommodated with a reasonable degree of reserve capacity.

6.5 Trip Distribution

The trips generated by the proposed development have been distributed on the surrounding road network using the directional flows on the surrounding road network. The proposed movements created by the development in the AM and PM peak hour are shown in Appendix C.

6.6 Junction Capacity Analysis

The junctions, as surveyed, have been put forward for analysis with the development traffic dispersed through the network as per the current follow conditions.

The results of this analysis are presented below.

6.6.1 Study Area

As part of the junction capacity assessments the following junctions were modelled in isolation –

- Site 1 – Site Access
- Site 2 – Boherboy Road/N81
- Site 3 – N81/N82 Signal Controlled Junction
- Site 4 – N82/Corbally Heath Roundabout
- Site 5 – N82/ Fortunestown Lane Signal Controlled Junction
- Site 6 – Carrigmore Estate/Fortunestown Lane Priority Controlled Junction.
- Site 7 – Church Road/Fortunestown Signal Controlled Junction..
- Site 8 – Boherboy Road/Saggart Signal Controlled Junction

6.6.2 Traffic Flows

Pinnacle Consulting collected traffic flows for the study area junctions the flows covered the morning and evening peak hours. As part of the junction analysis the following scenarios were modelled – 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

6.6.3 Site 1 – Site Access

The operation of the priority-controlled junction was modelled using PICADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 22.

<u>Scenario 1 – 2 No. Access Open</u>

In the 2032 opening year +5 years without development, all the roads operate within the 85% design threshold ratio of flow capacity (RFC) in both the morning and evening peak hours. The maximum RFC recorded was 0.351 with a corresponding queue of 0.53 in the 2032 AM Peak.

The new junction operates with a max delay of 0.23 mins.

<u>Scenario 2 – 3 No. Access Open</u>

In the 2042 opening year +15 years without development, all the roads operate within the 85% design threshold ratio of flow capacity (RFC) in both the morning and evening peak hours. The maximum RFC recorded was 0.283 with a corresponding queue of 0.39 in the 2042 AM Peak.

The new junction operates with a max delay of 0.21 mins.

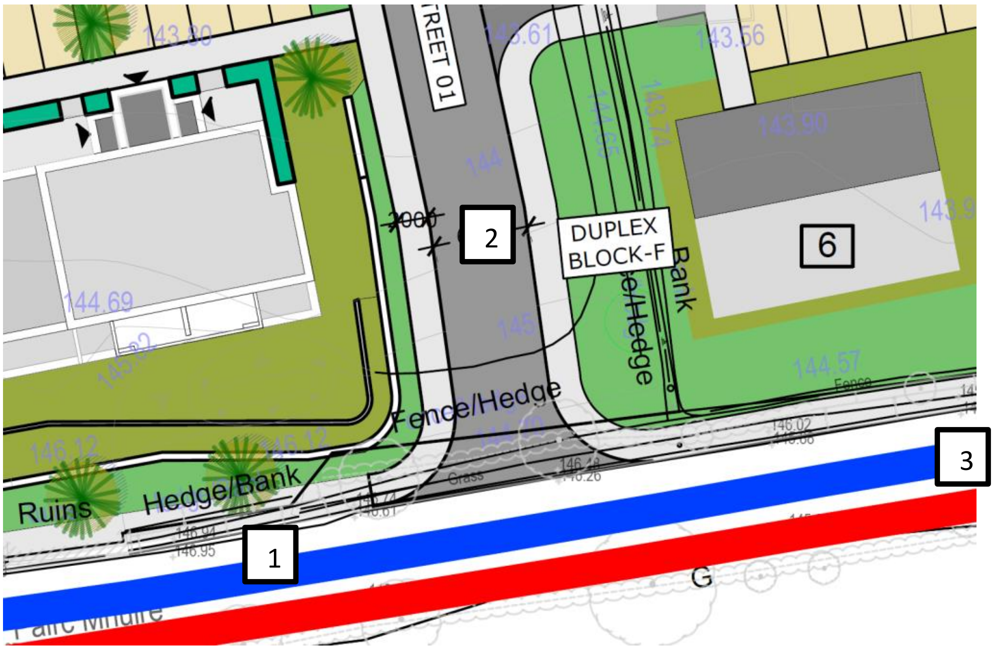


Figure 25 Site 1 – Site Access Junction Layout

The following arm destinations are used:

- Arm1 – Boherboy Road - West
- Arm 2 – Site Access
- Arm 3 – Boherboy Road - East

	AM			PM		
	Queue (PCU)	**Delay (min)**	**RFC**	**Queue (PCU)**	**Delay (min)**	**RFC**
	2027 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	0.52	0.23	0.346	0.15	0.19	0.133
Arm 3	0.14	0.09	0.079	0.51	0.09	0.204
	2032 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	0.53	0.23	0.351	0.15	0.19	0.135
Arm 3	0.15	0.09	0.080	0.53	0.09	0.208
	2042 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	0.39	0.21	0.283	0.09	0.19	0.105
Arm 3	0.11	0.09	0.066	0.44	0.09	0.168

Table 22 Site 1 – Site Access Modelling Results

6.6.4 Site 2 – Boherboy Road/N81

The operation of the priority-controlled junction was modelled using PICADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 23.

The maximum RFC recorded was 0.995 with a corresponding queue of 15.87 in the 2042 AM Peak. As the RFC value approaches 1.0 then queuing and delay can be expected to increase. It is normal practice to ensure that the RFC is below 0.85 to achieve a theoretical reserve capacity of greater than 15%, although a value of 0.85 can be exceeded in a future design year situation without any detrimental effect on the satisfactory and safe operation of the junction.

The junction operates with a max delay of 1.78 mins.

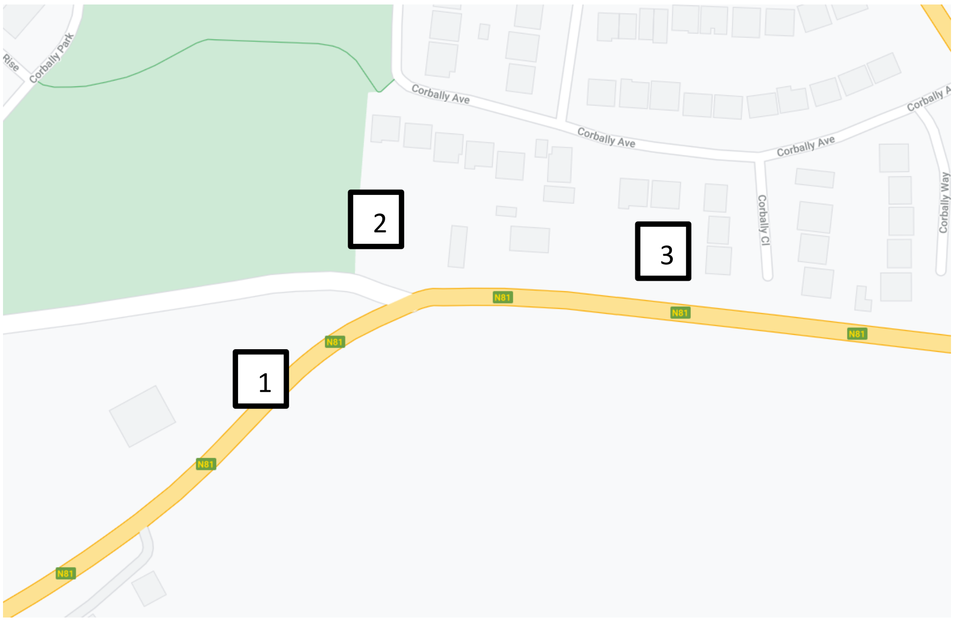


Figure 26 Site 2 – Boherboy Road/N81

The following arm destinations are used:

- Arm1 – N81 - West
- Arm 2 – Boherboy Road
- Arm 3 – N81 – East

	AM			PM		
	Queue (PCU)	Delay (min)	RFC	Queue (PCU)	Delay (min)	RFC
	Survey - 2020					
Arm 1	-	-	-	-	-	-
Arm 2	1.13	0.26	0.539	0.60	0.16	0.379
Arm 3	1.58	0.34	0.626	2.71	0.39	0.748
	2027 Base					
Arm 1	-	-	-	-	-	-
Arm 2	1.55	0.32	0.621	0.71	0.28	0.420
Arm 3	2.40	0.46	0.726	4.04	0.53	0.828
	2027 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	2.82	0.50	0.750	0.80	0.32	0.449
Arm 3	3.11	0.57	0.770	8.32	0.91	0.947
	2032 Base					
Arm 1	-	-	-	-	-	-
Arm 2	1.87	0.38	0.659	0.78	0.31	0.441
Arm 3	3.12	0.58	0.774	5.59	0.75	0.868
	2032 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	3.23	0.54	0.790	0.88	0.37	0.470
Arm 3	3.66	0.62	0.817	14.80	1.67	0.987
	2042 Base					
Arm 1	-	-	-	-	-	-
Arm 2	2.12	0.42	0.688	0.84	0.33	0.458
Arm 3	3.66	0.67	0.802	6.99	0.91	0.899
	2042 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	3.31	0.55	0.795	0.92	0.39	0.482
Arm 3	4.12	0.69	0.840	15.87	1.78	0.995

Table 23 Site 2 – Boherboy Road/N81 Modelling Results

6.6.5 Site 3 – N81/N82 Signal Controlled Junction

The operation of the signalised junction was modelled using LinSig software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 24 & 25.

The modelling illustrates that the N82/ Fortunestown Lane Signal Controlled Junction operates close to or at capacity in the AM peak in all scenarios. The maximum recorded DoS is 112.3% in 2042 with development added. For the same scenario, the maximum DoS in the PM peak period recorded is 97.0%.

A Dos value of 85% or below indicates that the junction is operating within capacity. A DoS value of between 85% and 100% indicates that the junction remains within capacity but is beginning to show signs of queuing and delay. A DoS value of less than 100% is desirable in urban areas during peak period traffic. However, values of greater than 100% are typical at many junctions.

From site observations, traffic at the junction is relatively light during non-peak periods. Commuter traffic/school traffic resulted in increased observed flows during the relevant peak periods.

These surges in traffic flows are temporary and of short duration but does lead to queuing and delays at the junction. This, combined with the narrow nature of geometry of the junction, results in queuing and delay during AM peak only with the proposed development having a minimal impact on the operation of the junction.

The following arm destinations are used:

- Arm1 – N81 - West
- Arm 2 – N82
- Arm 3 – N81- East

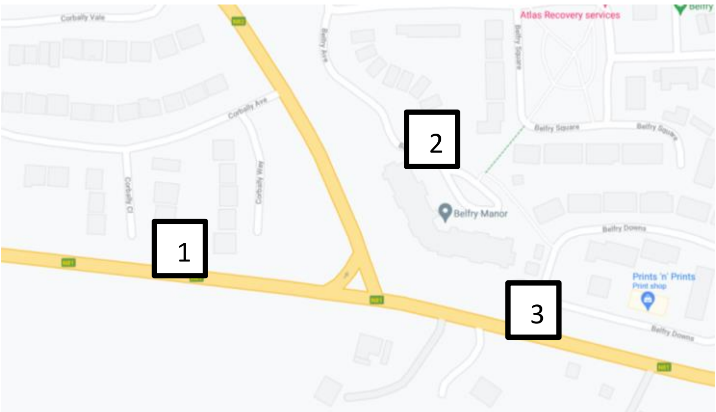


Figure 27 Site 3 N81/N82 Signal Controlled Junction Layout

Survey - AM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	67.4%	37.4	43.0
2/1	66.9%	115.3	25.9
3/1+3/2	67.0%	42.5	9.0
PRC for Signaled Lanes (%): 33.6			
2027 Base AM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	103.6%	193.8	136.1
2/1	103.5%	235.1	75.7
3/1+3/2	104.1%	173.9	52.9
PRC for Signalled Lanes (%): -15.7			
2027 Base + Development AM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	108.1%	271.0	162.6
2/1	107.0%	300.5	88.0
3/1+3/2	107.6%	239.9	67.1
PRC for Signalled Lanes (%): -20.1			
2032 Base AM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	107.2%	256.0	156.9
2/1	107.3%	304.1	89.9
3/1+3/2	106.4%	214.3	62.8
PRC for Signalled Lanes (%): -19.2			
2032 Base + Development AM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	111.8%	334.3	185.3
2/1	111.0%	372.9	103.1
3/1+3/2	111.8%	318.1	104.1
PRC for Signalled Lanes (%): -24.3			
2042 Base AM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	110.7%	317.4	177.0
2/1	110.5%	363.7	102.3
3/1+3/2	110.9%	299.1	81.7
PRC for Signalled Lanes (%): -23.2			
2042 Base + Development AM			
Item	**Deg Sat (%)**	**Av. Delay Per PCU (s/pcu)**	**Mean Max Queue (pcu)**
1/2+1/1	112.3%	342.9	191.2
2/1	111.5%	381.6	106.6
3/1+3/2	112.2%	323.9	107.2
PRC for Signalled Lanes (%): -24.8			

Table 24 Site 3 N81/N82 Signal Controlled Junction Modelling Output AM

Survey - PM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	70.8%	95.0	29.5
2/1	70.6%	108.6	31.8
3/1+3/2	70.7%	30.3	33.5
PRC for Signalled Lanes (%): 27.0			
2027 Base PM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	102.8%	203.2	79.8
2/1	102.3%	225.6	62.4
3/1+3/2	102.7%	123.2	70.7
PRC for Signalled Lanes (%): -14.2			
2027 Base + Development PM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	91.1%	128.1	40.6
2/1	90.7%	129.4	49.3
3/1+3/2	91.4%	54.4	59.3
PRC for Signalled Lanes (%): -1.6			
2032 Base PM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	92.2%	131.9	41.7
2/1	91.4%	131.2	50.1
3/1+3/2	91.9%	55.6	58.5
PRC for Signalled Lanes (%): -2.5			
2032 Base + Development PM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	94.9%	143.2	44.8
2/1	94.0%	140.0	53.2
3/1+3/2	94.6%	62.6	66.6
PRC for Signalled Lanes (%): -5.5			
2042 Base PM			
Item	**DoS**	**Av. Delay (s/pcu)**	**Queue (pcu)**
1/2+1/1	93.9%	137.9	44.1
2/1	94.0%	140.0	53.2
3/1+3/2	95.0%	64.4	65.3
PRC for Signalled Lanes (%): -5.6			
2042 Base + Development PM			
Item	**Deg Sat (%)**	**Av. Delay Per PCU (s/pcu)**	**Mean Max Queue (pcu)**
1/2+1/1	96.0%	148.4	46.8
2/1	97.0%	156.3	57.4
3/1+3/2	96.7%	71.2	71.8
PRC for Signalled Lanes (%): -7.8			

Table 25 Site 3 N81/N82 Signal Controlled Junction Modelling Output PM

6.6.6 Site 4 – N82/Corbally Heath Roundabout

The operation of the roundabout was modelled using ARCADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 26.

With all 3 access points open, the 2042 opening year +15 years with development, all the roads operate within the 85% design threshold ratio of flow capacity (RFC) in both the morning and evening peak hours. The maximum RFC recorded was 0.65 with a corresponding queue of 1.87 PCUs in the 2042 PM Peak.

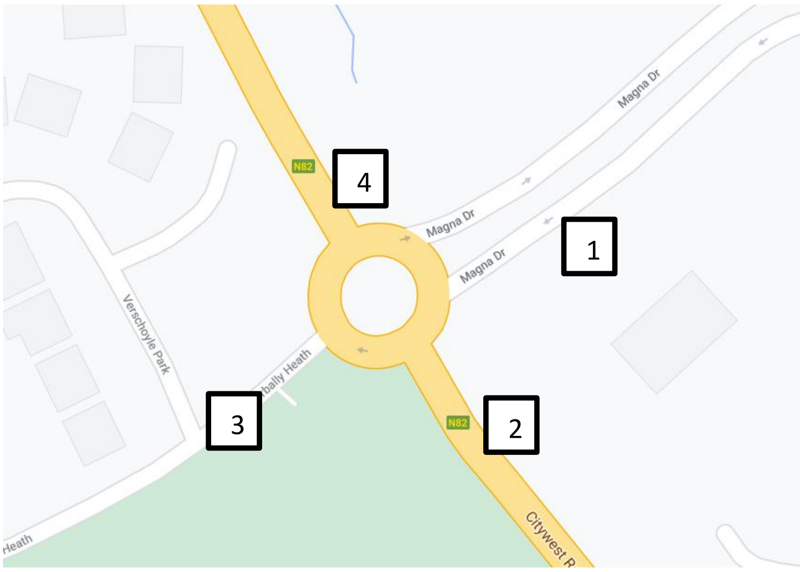


Figure 28 Site 4 N82/Corbally Heath Roundabout Junction Layout

The following arm destinations are used:

- Arm1 – Magna Drive
- Arm 2 – N82 South
- Arm 3 – Corbally Heath
- Arm 4 – N82 North

	AM				PM			
	Queue (PCU)	**Delay (min)**	**RFC**	**LOS**	**Queue (PCU)**	**Delay (min)**	**RFC**	**LOS**
	Survey - 2020							
Arm 1	0.34	0.06	0.25	A	0.56	0.09	0.36	A
Arm 2	0.59	0.07	0.37	A	1.29	0.12	0.56	A
Arm 3	0.18	0.06	0.15	A	0.75	0.11	0.43	A
Arm 4	0.67	0.07	0.40	A	1.46	0.12	0.60	A
	2027 Base							
Arm 1	0.40	0.07	0.28	A	0.61	0.08	0.38	A
Arm 2	0.73	0.08	0.42	A	1.59	0.13	0.62	A
Arm 3	0.21	0.07	0.17	A	0.09	0.07	0.09	A

Arm 4	0.90	0.08	0.48	A	1.35	0.11	0.58	A
	2027 Base + Development							
Arm 1	0.39	0.06	0.28	A	0.85	0.12	0.46	A
Arm 2	0.73	0.08	0.42	A	1.59	0.13	0.62	A
Arm 3	0.17	0.07	0.14	A	0.10	0.07	0.09	A
Arm 4	0.88	0.08	0.47	A	2.17	0.18	0.69	B
	2032 Base							
Arm 1	0.42	0.07	0.30	A	0.67	0.09	0.40	A
Arm 2	0.79	0.08	0.44	A	1.81	0.14	0.65	A
Arm 3	0.23	0.07	0.19	A	0.10	0.07	0.09	A
Arm 4	0.98	0.09	0.50	A	1.52	0.12	0.61	A
	2032 Base + Development							
Arm 1	0.42	0.07	0.30	A	0.67	0.09	0.40	A
Arm 2	0.79	0.08	0.44	A	1.81	0.14	0.65	A
Arm 3	0.23	0.07	0.19	A	0.10	0.07	0.09	A
Arm 4	0.98	0.09	0.50	A	1.52	0.12	0.61	A
	2042 Base							
Arm 1	0.45	0.07	0.31	A	0.72	0.09	0.42	A
Arm 2	0.85	0.09	0.46	A	2.02	0.15	0.67	A
Arm 3	0.25	0.07	0.20	A	0.11	0.07	0.10	A
Arm 4	1.06	0.09	0.52	A	1.68	0.13	0.63	A
	2042 Base + Development							
Arm 1	0.50	0.08	0.33	A	0.74	0.10	0.43	A
Arm 2	0.96	0.10	0.49	A	2.22	0.17	0.69	A
Arm 3	0.36	0.08	0.27	A	0.13	0.08	0.12	A
Arm 4	1.55	0.11	0.61	A	1.87	0.14	0.65	A

Table 26 Site 4 - N82/Corbally Heath Roundabout Results

The junction operates with a max delay of 0.12min.

Note that no development flows reach this site until 2042.

6.6.7 Site 5 – N82/ Fortunestown Lane Signal Controlled Junction

The operation of the signalised junction was modelled using OSCADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 27.

The modelling illustrates that the N82/ Fortunestown Lane Signal Controlled Junction approaches capacity in the 2042 design scenario in the AM peak period. The maximum recorded DoS is 86.72% in 2042 with development added. For the same scenario, the maximum DoS in the PM peak period recorded is 70.72%.

A Dos value of 85% or below indicates that the junction is operating within capacity. A DoS value of between 85% and 100% indicates that the junction remains within capacity but is beginning to show signs of queuing and delay.

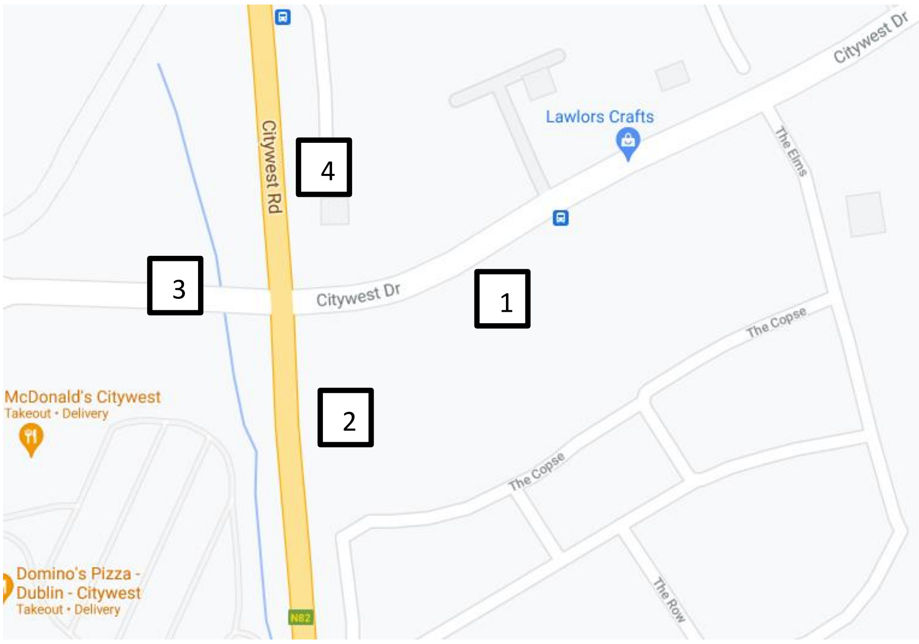


Figure 29 Site 5 N82/ Fortunestown Lane Signal Controlled Junction Layout

The following arm destinations are used:

- Arm1 – Citywest Drive
- Arm 2 – N82 Citywest Road South
- Arm 3 – Fortunestown Lane
- Arm 4 – N82 Citywest Road North

	AM		PM	
	DoS (%)	**Delay (s)**	**DoS (%)**	**Delay (s)**
	Survey - 2020			
Arm 1	49.21	142.50	49.47	145.39
Arm 2	50.07	58.50	48.65	123.74
Arm 3	48.80	150.90	49.04	114.65
Arm 4	48.30	123.50	4945	80.23
Cycle Time	300s		300s	
Total Delay	44.1 pcu		51.00 pcu	
PRC%	79.73		81.93	
	2027 Base			
Arm 1	80.06	100.98	63.65	148.54

Arm 2	80.077	126.11	64.30	141.99
Arm 3	80.34	144.04	64.51	12.58
Arm 4	81.23	175.53	63.95	89.19
Cycle Time	300s		300s	
Total Delay	82.69 pcu		39.52 pcu	
PRC%	10.79		33.20	
	2027 Base + Development			
Arm 1	79.81	154.19	66.77	146.07
Arm 2	79.93	124.00	65.57	143.20
Arm 3	80.93	145.13	66.93	123.30
Arm 4	79.35	169.14	66.70	94.71
Cycle Time	300s		300s	
Total Delay	85.95		72.93 pcu	
PRC%	11.2		34.47	
	2032 Base			
Arm 1	82.40	147.21	66.80	150.09
Arm 2	82.94	129.81	67.23	143.73
Arm 3	84.57	155.44	66.91	122.44
Arm 4	82.20	176.40	66.98	91.17
Cycle Time	300s		300s	
Total Delay	89.98 pcu		49.33 pcu	
PRC%	6.42		33.86	
	2032 Base + Development			
Arm 1	84.28	106.79	68.97	147.45
Arm 2	83.38	130.62	68.13	145.83
Arm 3	83.00	149.36	69.10	125.16
Arm 4	85.15	187.79	69.10	95.39
Cycle Time	180s		300s	
Total Delay	73.46		75.70 pcu	
PRC%	-1.96		30.25	
	2042 Base			
Arm 1	84.84	148.18	68.97	151.75
Arm 2	84.28	133.31	69.31	145.99
Arm 3	84.57	155.44	68.77	124.025
Arm 4	84.04	174.60	68.85	92.48
Cycle Time	300s		300s	
Total Delay	93.62pcu		76.92 pcu	
PRC%	6.09		29.85	
	2042 Base + Development			
Arm 1	84.98	154.85	69.54	151.18

Arm 2	86.26	137.85	69.83	147.78
Arm 3	86.72	161.63	70.72	126.67
Arm 4	84.85	183.78	70.18	95.52
Cycle Time	300s		300s	
Total Delay	96.25 pcu		77.84 pcu	
PRC%	3.79		27.26	

Table 27 Site 5 N82/Fortunestown Lane Signal Controlled Junction Modelling Results

6.6.8 Site 6 – Carrigmore Estate/Fortunestown Lane Priority Controlled Junction.

The operation of the priority-controlled junction was modelled using PICADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 28.

The maximum RFC recorded was 1.049 with a corresponding queue of 16.54 in the 2042 AM Peak. As the RFC value approaches 1.0 then queuing and delay can be expected to increase. It is normal practice to ensure that the RFC is below 0.85 to achieve a theoretical reserve capacity of greater than 15%, although a value of 0.85 can be exceeded in a future design year situation without any detrimental effect on the satisfactory and safe operation of the junction.

The junction operates with a max delay of 3.16 mins.

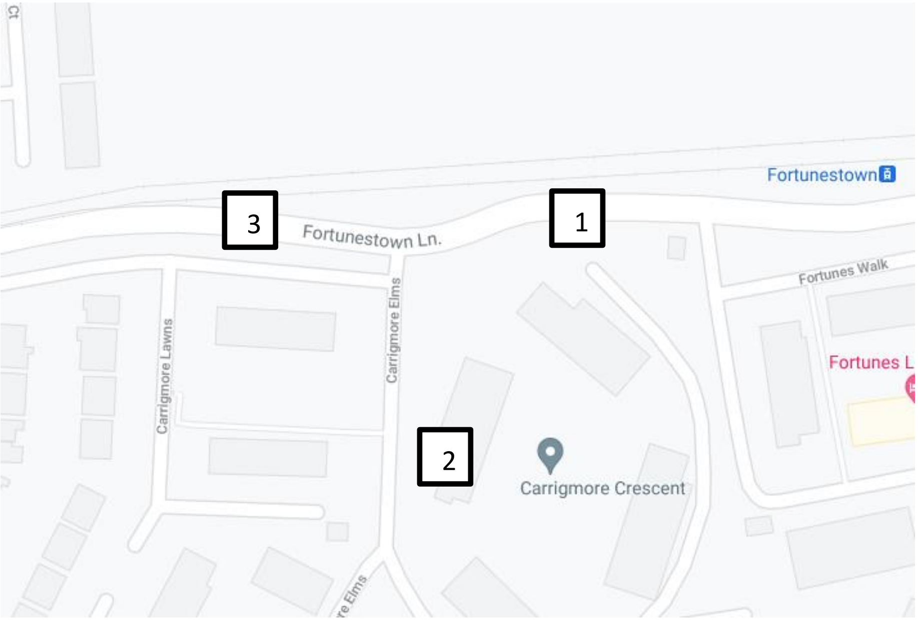


Figure 30 Site 6 Carrigmore Estate/Fortunestown Lane Priority Controlled Junction Layout

The following arm destinations are used:

- Arm1 – Fortunestown Lane - East

- Arm 2 – Carrigmore
- Arm 3 – Fortunestown Lane - West

	AM			PM		
	Queue (PCU)	Delay (min)	RFC	Queue (PCU)	Delay (min)	RFC
	Survey					
Arm 1	-	-	-	-	-	-
Arm 2	0.56	0.22	0.365	0.21	0.18	0.178
Arm 3	0.05	0.13	0.047	0.08	0.15	0.077
	2027 Base					
Arm 1	-	-	-	-	-	-
Arm 2	1.33	0.46	0.587	0.31	0.24	0.237
Arm 3	0.09	0.15	0.085	0.10	0.16	0.093
	2027 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	10.92	1.80	1.044	0.60	0.29	0.380
Arm 3	0.18	0.17	0.148	0.26	0.19	0.200
	2032 Base					
Arm 1	-	-	-	-	-	-
Arm 2	1.55	0.51	0.627	0.34	0.25	0.256
Arm 3	0.10	0.15	0.088	0.11	0.17	0.100
	2032 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	13.57	2.13	1.093	0.65	0.30	0.398
Arm 3	0.18	0.17	0.152	0.27	0.20	0.209
	2042 Base					
Arm 1	-	-	-	-	-	-
Arm 2	1.89	0.60	0.662	0.36	0.26	0.269
Arm 3	0.09	0.16	0.086	0.12	0.17	0.104
	2042 Base + Development					
Arm 1	-	-	-	-	-	-
Arm 2	16.54	3.16	1.049	0.62	0.19	0.212
Arm 3	0.16	0.17	0.137	0.24	0.16	0.112

Table 28 Site 6 Carrigmore Estate/Fortunestown Lane Priority Controlled Junction Layout Modelling Output

6.6.9 Site 7 – Church Road/Fortunestown Lane Signal Controlled Junction

The operation of the signalised junction was modelled using OSCADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 29.

The modelling illustrates that the N82/ Fortunestown Lane Signal Controlled Junction approaches capacity in the 2042 design scenario in the AM peak period. The maximum recorded DoS is 109.46% in 2042 with development added. For the same scenario, the maximum DoS in the PM peak period recorded is 89.13%.

A Dos value of 85% or below indicates that the junction is operating within capacity. A DoS value of between 85% and 100% indicates that the junction remains within capacity but is beginning to show signs of queuing and delay. A DoS value of less than 100% is desirable in urban areas during peak period traffic. However, values of greater than 100% are typical at many junctions.

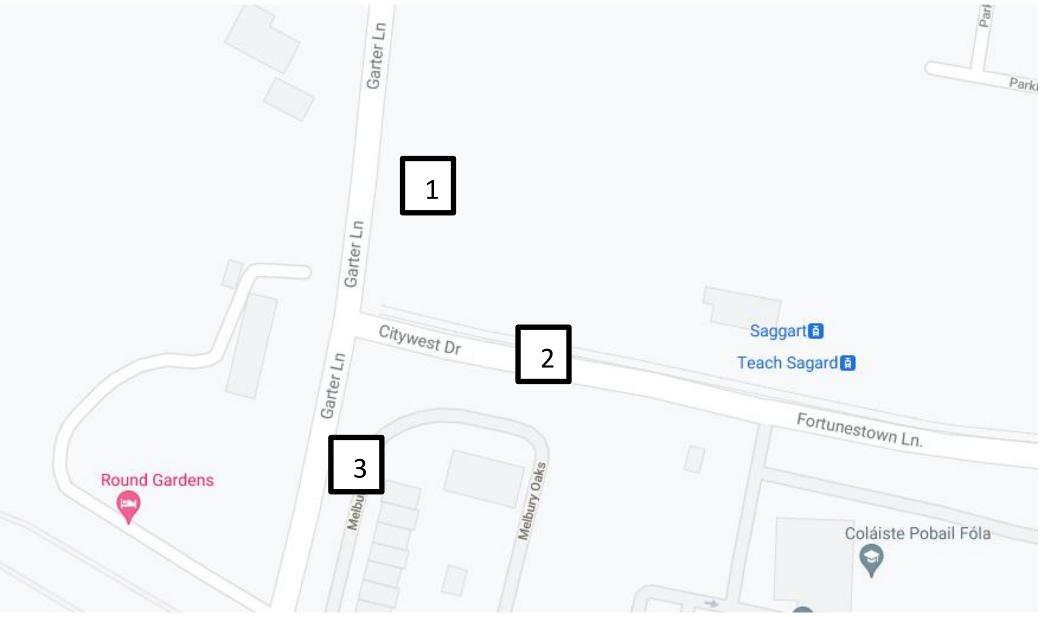


Figure 31 Site 7 Church Road/Fortunestown Lane Signal Controlled Junction Layout

The following arm destinations are used:

- Arm1 – Garters Lane – North
- Arm 2 – Citywest Drive/Fotutnestown Lane
- Arm 3 – Garters Lane – South

	AM		PM	
	DoS (%)	**Delay (s)**	**DoS (%)**	**Delay (s)**
	Survey - 2020			
Arm 1	60.31	117.69	58.61	92.18

Arm 2	59.99	107.67	58.32	82.17
Arm 3	60.19	63.49	58.28	108.13
Cycle Time	300s		300s	
Total Delay	26.65 pcu		27.43 pcu	
PCR (%)	47.98		55.36	
	2027 Base			
Arm 1	100.99	248.52	82.28	123.78
Arm 2	101.47	216.84	83.34	100.93
Arm 3	100.88	189.59	82.57	121.97
Cycle Time	300s		300s	
Total Delay	56.78 pcu		47.55 pcu	
PCR (%)	1.13		7.99	
	2027 Base + Development			
Arm 1	105.52	54.50	86.53	133.69
Arm 2	105.21	105.50	85.40	102.92
Arm 3	104.56	116.50	86.48	142.00
Cycle Time	300s		300s	
Total Delay	144.61 pcu		44.96 pcu	
PCR (%)	-14.71		-7.15	
	2032 Base			
Arm 1	103.64	295.78	86.63	129.93
Arm 2	103.51	248.40	85.03	103.03
Arm 3	104.19	242.40	86.03	129.44
Cycle Time	300s		300s	
Total Delay	133.02 pcu		51.21 pcu	
PCR (%)	- 13.62		4.61	
	2032 Base + Development			
Arm 1	106.86	349.38	89.90	139.40
Arm 2	106.99	308.58	88.889	111.10
Arm 3	107.13	297.77	88.91	82.50
Cycle Time	300s		300s	
Total Delay	167.33 pcu		56.78 pcu	
PCR (%)	-15.99		-1.13	
	2042 Base			
Arm 1	105.50	325.31	88.24	136.27
Arm 2	104.70	270.32	87.38	107.55
Arm 3	104.71	250.27	87.92	134.10
Cycle Time	300s		300s	
Total Delay	143.45 pcu		54.81 pcu	
PCR (%)	-14.69		2.00	

	2042 Base + Development			
Arm 1	108.76	381.98	88.78	136.92
Arm 2	109.46	354.91	89.05	113.79
Arm 3	109.06	334.84	89.13	135.83
Cycle Time	300s		300s	
Total Delay	192.16 pcu		57.09 pcu	
PCR (%)	-17.78		0.98	

Table 29 Site 7 Church Road/Fortunestown Lane Signal Controlled Junction Modelling Output

6.6.10 Site 8 – Boherboy Road/Saggart Signal Controlled Junction.

The operation of the signalised junction was modelled using OSCADY software, and tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

The results of the modelling are summarised in in Table 29.

The modelling illustrates that the Boherboy Road/Saggart Signal Controlled Junction is within capacity for both the AM and PM peak periods with a DoS of less than 100%. The maximum recorded DoS is 91.27% in 2042 with development added. For the same scenario, the maximum DoS in the PM peak period recorded is 90.22%.

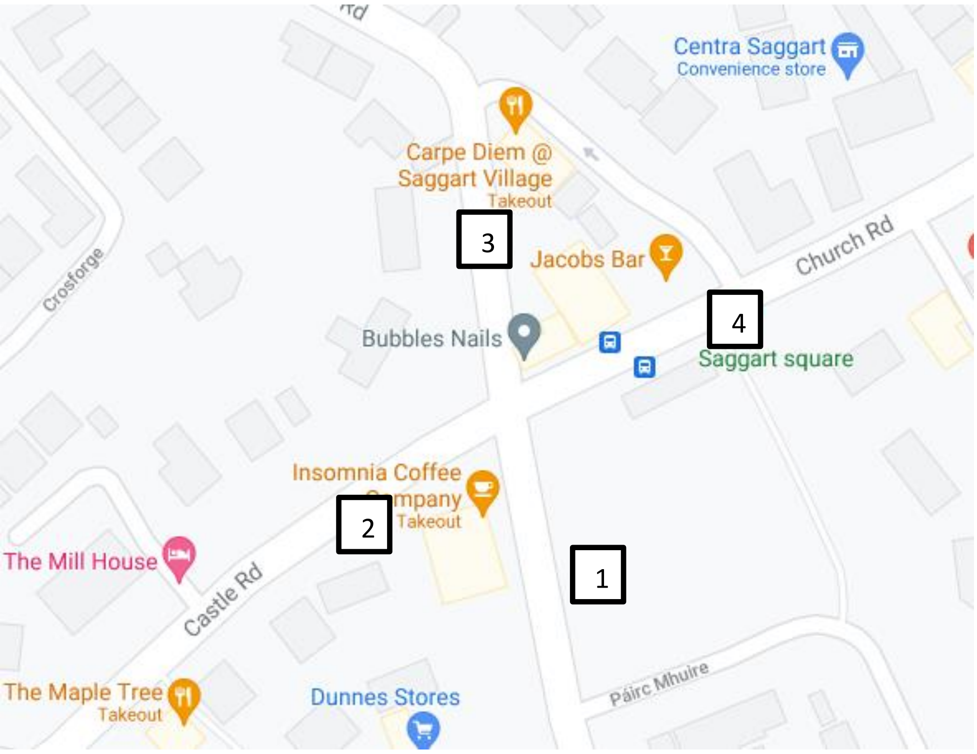


Figure 32 Site 8 Boherboy Road/Saggart Signal Controlled Junction Layout

The following arm destinations are used:

- Arm1 – Boherboy Road
- Arm 2 – Castle Road
- Arm 3 – Mill Road
- Arm 4 - Church Road

	AM		PM	
	DoS (%)	**Delay (s)**	**DoS (%)**	**Delay (s)**
	Survey - 2020			
Arm 1	68.89	53.69	73.31	51.77
Arm 2	72.14	57.14	71.58	87.31
Arm 3	70.69	47.46	72.41	49.51
Arm 4	71.11	79.72	73.30	59.38
Cycle Time	120s		120s	
Total Delay	18.26 pcu		19.00 pcu	
PCR (%)	24.76		22.79	
	2027 Base			
Arm 1	80.06	63.91	80.42	58.05
Arm 2	79.26	64.15	86.43	134.351
Arm 3	79.93	56.34	79.65	55.99
Arm 4	78.75	86.77	81.76	68.18
Cycle Time	120s		120s	
Total Delay	23.41 pcu		25.19 pcu	
PCR (%)	12.41		4.13	
	2027 Base + Development			
Arm 1	82.75	63.76	84.85	64.20
Arm 2	86.23	79.59	80.60	106.54
Arm 3	820.3	59.01	85.49	655.89
Arm 4	86.07	110.35	84.66	73.52
Cycle Time	120s		120s	
Total Delay	28.01 pcu		24.75 pcu	
PCR (%)	4.37		5.28	
	2032 Base			
Arm 1	83.72	69.35	83.97	62.76
Arm 2	82.02	68.02	89.75	152.37
Arm 3	83..55	61.28	82.89	60.23
Arm 4	81.84	93.71	85.87	76.21
Cycle Time	120s		120s	
Total Delay	26.64 pcu		28.88 pcu	

PCR (%)	7.5		0.28	
	2032 Base + Development			
Arm 1	85.84	69.08	88.40	71.57
Arm 2	90.21	92.08	83.01	114.06
Arm 3	85.46	64.63	89.02	74.40
Arm 4	88.91	122.56	88.29	82.76
Cycle Time	120s		120s	
Total Delay	32.38 pcu		32.18 pcu	
PCR (%)	-0.23		1.11	
	2042 Base			
Arm 1	86.09	74.01	86.63	67.52
Arm 2	84.55	72.49	93.07	175.85
Arm 3	86.22	66.16	85.75	65.16
Arm 4	83.17	97.24	88.53	83.52
Cycle Time	120s		120s	
Total Delay	29.15 pcu		32.76 pcu	
PCR (%)	4.38		-3.3	
	2042 Base + Development			
Arm 1	89.25	79.03	90.18	76.62
Arm 2	89.29	86.69	93.07	175.85
Arm 3	87.75	69.64	88.41	71.32
Arm 4	91.27	135.53	90.22	89.47
Cycle Time	120s		120s	
Total Delay	35.09 pcu		36.24 pcu	
PCR (%)	-1.39		-3.30	

Table 30 Site 8 Boherboy Road/Saggart Signal Controlled Junction

7 SUMMARY

This Traffic and Transport Assessment has been prepared by Pinnacle Consulting Engineers in support of a Strategy Housing Development application to An Bord Pleanála.

The site has an area of 18.26Ha.

The site is located approximately c. 13.7 Km southwest of Dublin City Centre and is bounded to the north by Carrigmore Estate; Corbally Estate to the east; agricultural land to the west and Boherboy Road to the south.

The site is currently a greenfield site.

7.1 Development Proposals

The development will consist of 655 no. dwellings, comprised of 257 no. 2, 3 & 4 bed, 2 & 3 storey detached, semi-detached & terraced houses, 152 no. 1, 2 & 3 bed duplex units in 17 no. 2-3, 3-4 & 4 storey blocks, and 246 no. 1, 2 & 3 bed apartments in 9 no. buildings ranging in height from 2, 2-5, 4-5 & 5 storeys, and a 2 storey crèche (693m²).

Access to the development will by via one no. vehicular access point from the Boherboy Road, along with proposed upgrade works to Boherboy Road to include the provision of a roadside footpath along the front of the site at the Boherboy Road, continuing eastwards to the junction with the N81 Blessington Road (for an overall distance of c.370m). The proposed development also provides for pedestrian and cyclist connectivity to the adjoining Carrigmore Park to the north-east, and vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath to the east and Carrigmore Green to the north.

The proposed development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station at the northern end of the site, (ii) public open spaces, including alongside the Corbally Stream, which will accommodate the provision of pedestrian / cyclist links to Carrigmore Park to the north-east, (iii) hard and soft landscaping and boundary treatments, (iv) undercroft, basement & surface car parking (914 no. spaces including EV parking), (v) bicycle parking (797 no. bicycle parking spaces), (vi) bin storage, (vii) public lighting, and (viii) 5 no. ESB sub-stations, all on an overall application site area of 18.3ha. In accordance with the Fortunestown Local Area Plan (2012) an area of approx. 1.42ha within the site is reserved as a future school site.

The site has an area of 18.26Ha.

7.2 Development Access

Access to the development will be via 3 No. accesses into the development via Boherboy Road, via the Corbally estate and via the Carrickmore estate.

Pedestrian access will be provided in conjunction with the vehicular access as well as access along the stream on the eastern boundary that will link the district park to Boherboy Road.

7.3 Parking

A total of 914 parking spaces will be provided for the development.

Parking will be provided within the curtilage of each house. On street surface car parking will be provided for the apartments, duplexs, creches and visitor car parking spaces.

The development plan standard suggests a total of 398 spaces for the Apartment/Duplex element of the proposed development.

Without car parking dominating the proposal and taking into account the guidance set out in publications like DMURS and 'Sustainable Urban Housing – Design Standards for New Apartments' it was proposed to provide 398 spaces for the apartment blocks and duplex.

This level of parking will both meet the demand for spaces but will also act as demand management tool for trips to/from the proposed development.

Therefore, a balance has been struck for the car parking provision taking into account the Development Plan standard and the anticipated demand.

South Dublin County Council's Development Plan 2016-2022 a total of 129 cycle spaces are required. The Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) suggests 713 spaces should be provided.

Given that car parking is provided at c. 0.9 spaces per unit, it's the provision of cycle spaces should be greater than the South Dublin County Council's Development Plan 2016-2022 requirement but less than the 'Sustainable Urban Housing – Design Standards for New Apartments' DoECLG (2020) requirement. Therefore, 797 cycle spaces will be provided.

7.4 Servicing

The proposed development has been designed such that service vehicles, including fire tenders and refuse vehicles, can circulate internally throughout the development.

7.5 Trip Generation

For the scale and type of development proposed, it is expected the total vehicle movements generated by the proposed development will be 77 arrivals and 251 departures in the AM peak (two-way total of 327). The total number of vehicle movements in the PM peak hour will be 196 arrivals and 86 departures (two-way total of 282).

7.6 Traffic Impact

The operation of the junctions were modelled using industry standard software including OSCADY,PICADY & ARCADY.

All sites were tested with the 2020 Survey Year, 2027 Opening Year, 2032 Opening Year + 5 Years and 2042 Opening Year + 15 Years. Each year was modelled with and without development.

A RFC/Dos value of 85% or below indicates that the junctions are operating within capacity. A RFC/DoS value of between 85% and 100% indicates that the junction remains within capacity but is beginning to show signs of queuing and delay. A DoS value of less than 100% is desirable in urban areas during peak period traffic. However, values of greater than 100% are typical at many junctions urban junction during peak times.

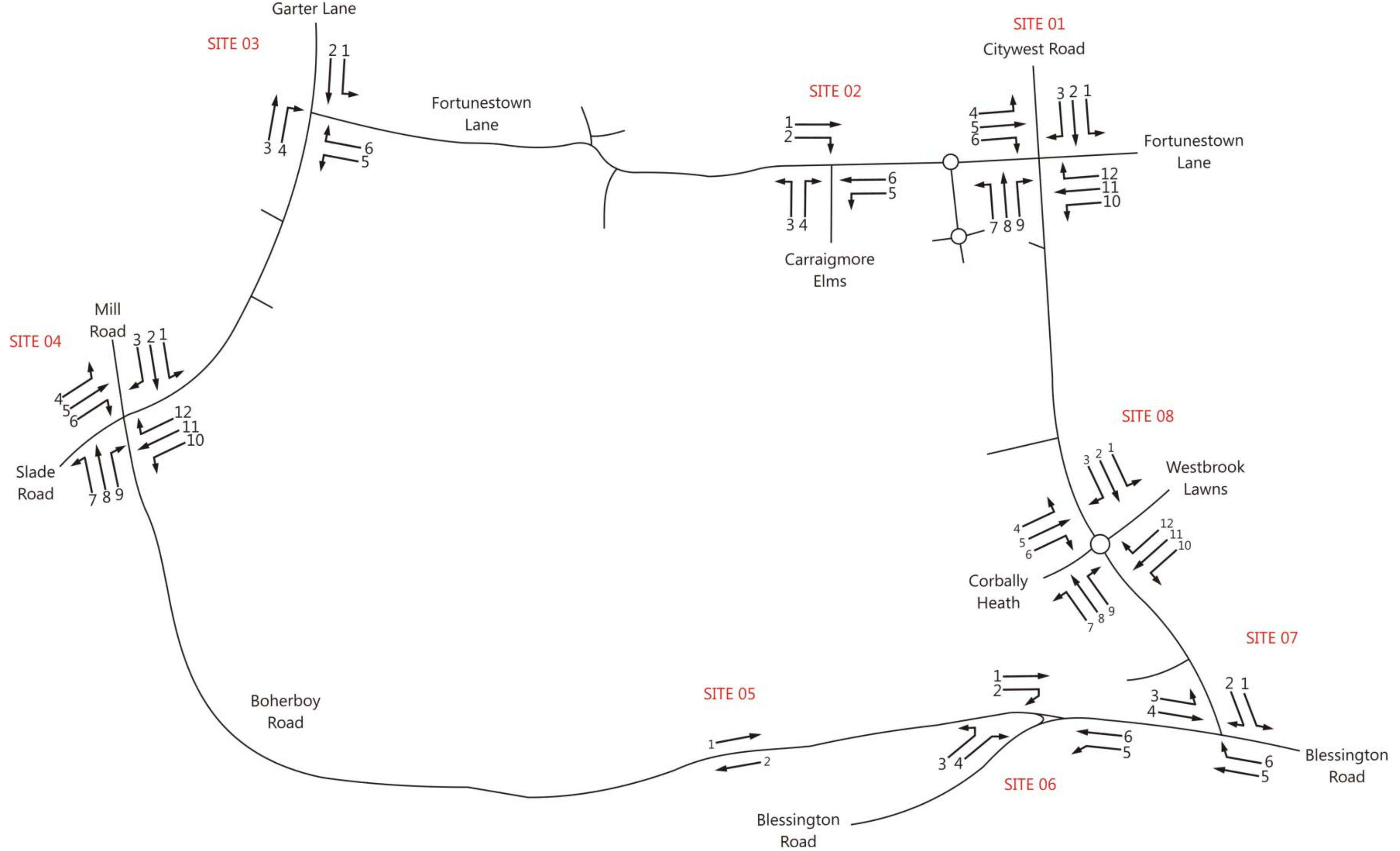
This impact assessment has confirmed that the proposed access arrangements would adequately accommodate anticipated levels of traffic visitation and that as such the traffic generated by the development would have no material adverse impact on the operation of all junctions modelled.

It has been shown by the application of recognised assessment techniques that there is a marginal uplift in traffic levels arising from the development and the distribution of resultant flows around the adjacent road network. The results in flows and movements can be accommodated by the neighbouring junctions with marginal uplift in congestion and delays expected at these junctions as a result of development traffic.

Accordingly, there are no reasons in relation to traffic and transportation aspects why this scheme should not be granted planning permission, and with this in mind the Planning Authority is respectfully requested to recommend a grant of planning permission.

Appendix A Traffic Counts

Site/Movement Numbering



	Job number: TRA/20/062	Job Day: Tuesday	Drawing No: TRA/20/062-02	traffinomics ie
	Client: Pinnacle Consulting Engineers	Job Date: 3rd March 2020	Author: SPW	

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS — **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — **TRA/20/062**

SITE: 01 — DATE: 3rd March 2020

LOCATION: N82 Citywest Road/Fortunestown Lane — DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	17	2	1	2	2	24	29	35	18	1	2	2	58	63	2	1	0	0	0	3	3
07:15	18	0	0	0	0	18	18	34	9	4	5	4	56	69	8	0	0	0	0	8	8
07:30	22	0	0	0	1	23	24	37	11	2	3	2	55	62	8	4	0	0	1	13	14
07:45	15	2	0	0	0	17	17	57	14	2	10	2	85	101	6	2	0	0	0	8	8
H/TOT	72	4	1	2	3	82	88	163	52	9	20	10	254	295	24	7	0	0	1	32	33
08:00	19	4	1	1	1	26	29	54	10	3	8	3	78	93	16	1	1	1	0	19	21
08:15	18	0	0	0	1	19	20	77	6	3	5	1	92	101	15	2	0	0	0	17	17
08:30	24	3	0	0	0	27	27	45	12	2	8	2	69	82	11	0	1	0	0	12	13
08:45	20	3	0	0	0	23	23	52	8	3	12	1	76	94	20	1	0	0	0	21	21
H/TOT	81	10	1	1	2	95	99	228	36	11	33	7	315	370	62	4	2	1	0	69	71
09:00	23	0	0	0	1	24	25	59	8	3	10	1	81	97	19	3	0	0	0	22	22
09:15	9	1	1	0	0	11	12	42	10	1	9	1	63	76	31	4	0	0	0	35	35
09:30	19	2	0	0	1	22	23	45	5	2	8	1	61	73	33	4	0	0	0	37	37
09:45	14	1	1	0	0	16	17	31	11	5	8	2	57	72	27	4	0	0	0	31	31
H/TOT	65	4	2	0	2	73	76	177	34	11	35	5	262	318	110	15	0	0	0	125	125
P/TOT	218	18	4	3	7	250	263	568	122	31	88	22	831	983	196	26	2	1	1	226	229

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	18	1	0	0	0	19	19	35	9	0	10	1	55	69	32	3	0	0	0	35	35
16:15	21	3	0	0	1	25	26	52	8	3	6	2	71	82	24	2	0	0	1	27	28
16:30	27	2	1	0	0	30	31	62	12	2	4	2	82	90	33	2	0	0	0	35	35
16:45	18	2	0	0	1	21	22	61	10	4	2	1	78	84	37	1	0	0	0	38	38
H/TOT	84	8	1	0	2	95	98	210	39	9	22	6	286	325	126	8	0	0	1	135	136
17:00	19	0	0	0	0	19	19	56	10	3	1	1	71	75	43	2	0	0	0	45	45
17:15	29	2	0	0	0	31	31	75	12	2	3	1	93	99	55	5	0	0	0	60	60
17:30	10	2	1	0	1	14	16	67	8	1	2	1	79	83	42	1	0	0	0	43	43
17:45	20	2	1	0	1	24	26	67	10	3	1	3	84	90	36	5	0	0	0	41	41
H/TOT	78	6	2	0	2	88	91	265	40	9	7	6	327	347	176	13	0	0	0	189	189
18:00	17	3	1	0	0	21	22	61	9	0	0	1	71	72	34	2	0	0	0	36	36
18:15	14	2	0	0	1	17	18	64	5	0	0	1	70	71	38	3	0	0	0	41	41
18:30	15	1	0	0	0	16	16	53	6	1	4	1	65	72	37	1	0	0	0	38	38
18:45	19	4	0	0	1	24	25	77	6	1	0	1	85	87	41	4	1	0	0	46	47
H/TOT	65	10	1	0	2	78	81	255	26	2	4	4	291	301	150	10	1	0	0	161	162

P/TOT	227	24	4	0	6	261	269	730	105	20	33	16	904	973	452	31	1	0	1	485	487

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 01 DATE: 3rd March 2020

LOCATION: N82 Citywest Road/Fortunestown Lane DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	26	8	0	0	1	35	36	34	3	0	0	0	37	37	9	1	0	0	0	10	10
07:15	21	7	1	0	1	30	32	32	4	1	0	0	37	38	11	3	0	0	0	14	14
07:30	26	5	1	0	1	33	35	31	2	0	0	0	33	33	14	0	0	0	0	14	14
07:45	35	2	0	0	0	37	37	52	5	0	0	1	58	59	14	1	0	0	0	15	15
H/TOT	108	22	2	0	3	135	139	149	14	1	0	1	165	167	48	5	0	0	0	53	53
08:00	39	7	1	0	0	47	48	47	4	0	0	0	51	51	11	2	0	0	0	13	13
08:15	48	3	1	1	0	53	55	54	5	0	0	1	60	61	27	2	0	0	1	30	31
08:30	35	6	0	0	3	44	47	60	2	0	0	0	62	62	24	3	0	0	1	28	29
08:45	40	4	0	0	0	44	44	44	3	0	0	1	48	49	18	1	0	0	0	19	19
H/TOT	162	20	2	1	3	188	193	205	14	0	0	2	221	223	80	8	0	0	2	90	92
09:00	36	3	0	0	0	39	39	51	2	0	0	0	53	53	31	3	0	0	1	35	36
09:15	28	5	1	0	0	34	35	62	2	0	0	0	64	64	21	1	1	1	0	24	26
09:30	31	5	0	0	0	36	36	36	9	0	0	1	46	47	20	3	0	0	0	23	23
09:45	38	3	0	0	0	41	41	33	4	0	0	0	37	37	13	1	2	0	0	16	17
H/TOT	133	16	1	0	0	150	151	182	17	0	0	1	200	201	85	8	3	1	1	98	102
P/TOT	403	58	5	1	6	473	483	536	45	1	0	4	586	591	213	21	3	1	3	241	247

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	21	0	1	0	0	22	23	48	2	0	0	0	50	50	24	0	0	0	1	25	26
16:15	38	3	0	0	0	41	41	57	5	0	0	1	63	64	19	5	0	0	0	24	24
16:30	26	0	1	0	1	28	30	60	2	0	0	1	63	64	42	3	2	0	0	47	48
16:45	24	3	0	0	0	27	27	50	7	0	0	0	57	57	19	2	0	0	0	21	21
H/TOT	109	6	2	0	1	118	120	215	16	0	0	2	233	235	104	10	2	0	1	117	119
17:00	17	2	0	0	0	19	19	44	4	1	0	0	49	50	37	1	1	0	0	39	40
17:15	21	0	0	0	0	21	21	47	3	0	0	0	50	50	37	4	0	0	0	41	41
17:30	23	1	0	0	0	24	24	63	7	0	0	0	70	70	34	5	0	0	0	39	39
17:45	20	1	0	0	0	21	21	49	5	0	0	0	54	54	26	3	0	0	0	29	29
H/TOT	81	4	0	0	0	85	85	203	19	1	0	0	223	224	134	13	1	0	0	148	149
18:00	25	1	0	0	1	27	28	46	3	0	0	0	49	49	38	1	0	0	0	39	39
18:15	25	4	0	0	0	29	29	55	3	1	0	0	59	60	23	4	0	0	0	27	27
18:30	28	2	0	0	1	31	32	61	2	0	0	0	63	63	32	1	0	0	0	33	33
18:45	25	6	0	0	0	31	31	39	3	0	0	0	42	42	24	6	0	0	0	30	30
H/TOT	103	13	0	0	2	118	120	201	11	1	0	0	213	214	117	12	0	0	0	129	129

P/TOT	293	23	2	0	3	321	325	619	46	2	0	2	669	672	355	35	3	0	1	394	397

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 01 DATE: 3rd March 2020

LOCATION: N82 Citywest Road/Fortunestown Lane DAY: Tuesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	4	1	0	0	0	5	5	77	21	3	9	0	110	123	2	4	1	0	0	7	8
07:15	7	2	1	0	0	10	11	75	15	3	14	3	110	133	12	2	0	0	0	14	14
07:30	6	0	0	1	1	8	10	105	20	1	15	0	141	161	6	2	0	0	1	9	10
07:45	5	2	0	0	0	7	7	80	20	1	8	2	111	124	9	3	0	0	1	13	14
H/TOT	22	5	1	1	1	30	33	337	76	8	46	5	472	541	29	11	1	0	2	43	46
08:00	9	0	1	0	0	10	11	114	19	4	10	2	149	166	15	1	0	0	0	16	16
08:15	1	2	0	0	2	5	7	82	12	3	4	0	101	108	8	0	0	1	1	10	12
08:30	3	1	0	0	0	4	4	84	11	3	7	1	106	118	7	0	0	0	0	7	7
08:45	7	2	0	0	0	9	9	90	22	3	12	2	129	148	12	0	1	0	0	13	14
H/TOT	20	5	1	0	2	28	31	370	64	13	33	5	485	539	42	1	1	1	1	46	49
09:00	14	2	0	0	0	16	16	73	12	2	13	0	100	118	5	3	0	0	0	8	8
09:15	13	0	0	0	0	13	13	64	7	4	9	1	85	100	6	1	1	0	1	9	11
09:30	19	2	0	0	0	21	21	48	11	3	6	2	70	81	8	0	1	0	0	9	10
09:45	10	1	0	0	0	11	11	40	9	2	7	0	58	68	8	1	0	0	0	9	9
H/TOT	56	5	0	0	0	61	61	225	39	11	35	3	313	367	27	5	2	0	1	35	37
P/TOT	98	15	2	1	3	119	124	932	179	32	114	13	1270	1447	98	17	4	1	4	124	131

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	23	1	0	0	1	25	26	41	11	4	3	2	61	69	11	0	0	0	1	12	13
16:15	25	3	1	0	0	29	30	43	13	3	4	0	63	70	9	0	0	0	1	10	11
16:30	31	4	0	0	0	35	35	62	6	5	3	2	78	86	16	1	0	0	0	17	17
16:45	22	5	0	0	2	29	31	54	4	1	6	1	66	75	6	1	1	0	1	9	11
H/TOT	101	13	1	0	3	118	122	200	34	13	16	5	268	300	42	2	1	0	3	48	52
17:00	29	3	0	0	0	32	32	46	1	1	2	1	51	55	33	2	0	0	0	35	35
17:15	44	6	0	0	0	50	50	45	9	2	1	2	59	63	14	3	0	0	0	17	17
17:30	30	5	0	0	0	35	35	38	6	1	4	1	50	57	20	2	0	0	0	22	22
17:45	30	1	0	0	0	31	31	44	5	0	1	2	52	55	6	1	0	0	0	7	7
H/TOT	133	15	0	0	0	148	148	173	21	4	8	6	212	230	73	8	0	0	0	81	81
18:00	37	5	0	0	0	42	42	36	8	0	2	0	46	49	16	2	0	0	0	18	18
18:15	34	2	0	0	0	36	36	48	6	1	0	1	56	58	14	1	0	0	0	15	15
18:30	22	1	0	0	0	23	23	42	6	0	0	2	50	52	8	3	0	0	0	11	11
18:45	34	1	0	0	0	35	35	60	3	0	0	2	65	67	16	0	0	0	0	16	16
H/TOT	127	9	0	0	0	136	136	186	23	1	2	5	217	225	54	6	0	0	0	60	60

P/TOT	361	37	1	0	3	402	406	559	78	18	26	16	697	756	169	16	1	0	3	189	193

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 01 DATE: 3rd March 2020

LOCATION: N82 Citywest Road/Fortunestown Lane DAY: Tuesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	4	0	0	1	0	5	6	3	2	0	0	0	5	5	8	2	0	0	0	10	10
07:15	10	1	0	0	1	12	13	13	1	0	0	0	14	14	15	6	0	0	0	21	21
07:30	6	2	0	0	1	9	10	22	3	0	0	1	26	27	15	7	3	0	1	26	29
07:45	8	0	0	0	1	9	10	36	2	0	0	1	39	40	27	2	0	1	0	30	31
H/TOT	28	3	0	1	3	35	39	74	8	0	0	2	84	86	65	17	3	1	1	87	91
08:00	6	2	0	1	0	9	10	33	1	0	0	2	36	38	26	6	1	2	1	36	40
08:15	9	1	1	0	0	11	12	46	4	0	0	3	53	56	28	3	2	0	0	33	34
08:30	8	1	0	0	0	9	9	38	1	0	0	3	42	45	42	4	0	0	0	46	46
08:45	10	0	1	0	0	11	12	39	3	0	0	0	42	42	25	3	0	0	1	29	30
H/TOT	33	4	2	1	0	40	42	156	9	0	0	8	173	181	121	16	3	2	2	144	150
09:00	21	2	1	1	1	26	29	56	1	0	0	0	57	57	21	5	0	0	0	26	26
09:15	4	0	0	0	0	4	4	35	1	1	0	0	37	38	20	2	1	0	1	24	26
09:30	11	0	1	0	0	12	13	37	3	0	0	0	40	40	10	1	0	0	0	11	11
09:45	7	3	1	0	0	11	12	41	3	1	0	0	45	46	16	3	0	0	1	20	21
H/TOT	43	5	3	1	1	53	57	169	8	2	0	0	179	180	67	11	1	0	2	81	84
P/TOT	104	12	5	3	4	128	138	399	25	2	0	10	436	447	253	44	7	3	5	312	324

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	14	3	0	0	1	18	19	51	6	1	1	0	59	61	13	4	0	1	1	19	21
16:15	11	4	0	0	2	17	19	53	5	1	0	1	60	62	12	7	0	0	0	19	19
16:30	17	2	0	0	0	19	19	60	4	1	0	0	65	66	6	2	0	0	0	8	8
16:45	31	7	0	0	0	38	38	44	3	2	0	0	49	50	17	2	0	0	0	19	19
H/TOT	73	16	0	0	3	92	95	208	18	5	1	1	233	238	48	15	0	1	1	65	67
17:00	21	3	0	0	0	24	24	80	9	0	0	0	89	89	6	2	0	0	1	9	10
17:15	18	3	0	0	0	21	21	66	8	0	0	0	74	74	9	2	0	0	1	12	13
17:30	21	4	0	0	0	25	25	62	6	2	0	0	70	71	10	1	0	0	0	11	11
17:45	16	4	0	0	0	20	20	49	7	1	0	0	57	58	15	0	1	0	1	17	19
H/TOT	76	14	0	0	0	90	90	257	30	3	0	0	290	292	40	5	1	0	3	49	53
18:00	26	1	0	0	0	27	27	54	2	0	0	0	56	56	11	1	0	0	0	12	12
18:15	27	2	0	0	0	29	29	47	4	1	0	0	52	53	16	1	0	0	1	18	19
18:30	7	0	0	0	0	7	7	60	1	0	0	0	61	61	19	1	0	0	0	20	20
18:45	17	0	0	0	0	17	17	48	3	0	0	0	51	51	28	0	1	0	1	30	32
H/TOT	77	3	0	0	0	80	80	209	10	1	0	0	220	221	74	3	1	0	2	80	83

P/TOT	226	33	0	0	3	262	265	674	58	9	1	1	743	750	162	23	2	1	6	194	202

PCU's Through Junction
335
383
428
463
1609
535
513
489
504
2041
525
437
415
381
1758
5408

PCU's Through Junction
431
475
528
472
1906
492
540
495
450
1977
449
455
428
479
1810

5693

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 02 DATE: 3rd March 2020

LOCATION: Fortunestown Lane/Carrigmore Elms DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	43	2	0	0	0	45	45	1	0	0	0	0	1	1	2	0	0	0	0	2	2
07:15	35	8	1	0	1	45	47	4	1	0	0	0	5	5	3	1	0	0	0	4	4
07:30	48	2	0	0	0	50	50	1	0	0	0	0	1	1	0	1	0	0	0	1	1
07:45	40	5	0	0	0	45	45	0	3	0	0	0	3	3	7	0	0	0	0	7	7
H/TOT	166	17	1	0	1	185	187	6	4	0	0	0	10	10	12	2	0	0	0	14	14
08:00	59	5	1	0	0	65	66	1	0	0	0	0	1	1	5	0	0	0	0	5	5
08:15	76	7	0	1	2	86	89	4	0	0	0	0	4	4	3	0	0	0	0	3	3
08:30	72	4	0	0	4	80	84	6	0	0	0	0	6	6	7	2	0	0	0	9	9
08:45	84	6	1	0	1	92	94	10	0	0	0	0	10	10	9	0	0	0	0	9	9
H/TOT	291	22	2	1	7	323	332	21	0	0	0	0	21	21	24	2	0	0	0	26	26
09:00	86	8	0	0	2	96	98	4	0	0	0	0	4	4	4	0	0	0	0	4	4
09:15	60	8	1	1	0	70	72	3	0	0	0	0	3	3	4	0	0	0	0	4	4
09:30	31	7	0	0	1	39	40	3	0	0	0	0	3	3	2	1	0	0	0	3	3
09:45	28	6	1	0	1	36	38	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	205	29	2	1	4	241	247	10	0	0	0	0	10	10	10	2	0	0	0	12	12
P/TOT	662	68	5	2	12	749	766	37	4	0	0	0	41	41	46	6	0	0	0	52	52

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	52	4	0	0	1	57	58	9	1	0	0	0	10	10	6	0	0	0	0	6	6
16:15	42	6	1	0	0	49	50	5	3	0	0	1	9	10	3	0	0	0	0	3	3
16:30	51	4	1	0	0	56	57	7	2	0	0	0	9	9	2	1	0	0	0	3	3
16:45	42	8	0	0	0	50	50	2	0	1	0	0	3	4	2	0	0	0	0	2	2
H/TOT	187	22	2	0	1	212	214	23	6	1	0	1	31	33	13	1	0	0	0	14	14
17:00	47	6	0	0	0	53	53	3	3	0	0	0	6	6	3	1	0	0	0	4	4
17:15	49	5	0	0	0	54	54	9	0	0	0	0	9	9	2	0	0	0	0	2	2
17:30	42	2	0	0	0	44	44	6	1	0	0	0	7	7	3	2	0	0	0	5	5
17:45	49	1	0	0	0	50	50	9	0	0	0	0	9	9	0	0	0	0	0	0	0
H/TOT	187	14	0	0	0	201	201	27	4	0	0	0	31	31	8	3	0	0	0	11	11
18:00	54	5	0	0	0	59	59	9	1	0	0	0	10	10	2	2	0	0	0	4	4
18:15	45	0	0	0	0	45	45	3	1	0	0	0	4	4	2	0	0	0	0	2	2
18:30	45	2	0	0	1	48	49	2	0	0	0	0	2	2	1	1	0	0	0	2	2
18:45	52	5	0	0	0	57	57	3	1	1	0	0	5	6	4	0	0	0	0	4	4
H/TOT	196	12	0	0	1	209	210	17	3	1	0	0	21	22	9	3	0	0	0	12	12

P/TOT	570	48	2	0	2	622	625	67	13	2	0	1	83	85	30	7	0	0	0	37	37

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 02 DATE: 3rd March 2020

LOCATION: Fortunestown Lane/Carrigmore Elms DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	17	8	0	0	0	25	25	1	1	0	0	0	2	2	9	2	0	0	0	11	11
07:15	17	5	1	0	0	23	24	2	0	0	0	0	2	2	26	3	1	0	0	30	31
07:30	19	3	0	0	0	22	22	5	0	0	0	1	6	7	32	4	0	1	0	37	38
07:45	34	2	0	0	0	36	36	5	1	0	0	0	6	6	37	6	0	0	1	44	45
H/TOT	87	18	1	0	0	106	107	13	2	0	0	1	16	17	104	15	1	1	1	122	125
08:00	39	1	0	0	0	40	40	10	0	0	0	2	12	14	45	4	1	1	1	52	55
08:15	25	5	0	0	0	30	30	6	0	0	0	0	6	6	67	3	1	0	4	75	80
08:30	21	3	0	0	0	24	24	4	0	0	0	0	4	4	57	1	0	0	4	62	66
08:45	20	0	0	0	0	20	20	4	2	0	0	0	6	6	46	3	0	0	0	49	49
H/TOT	105	9	0	0	0	114	114	24	2	0	0	2	28	30	215	11	2	1	9	238	249
09:00	20	1	0	0	0	21	21	5	0	0	0	0	5	5	43	3	0	0	0	46	46
09:15	20	3	0	0	0	23	23	8	2	0	0	0	10	10	25	3	1	0	0	29	30
09:30	11	3	0	0	0	14	14	10	3	0	0	0	13	13	25	1	0	0	0	26	26
09:45	12	1	0	0	0	13	13	7	2	0	0	0	9	9	33	3	0	0	0	36	36
H/TOT	63	8	0	0	0	71	71	30	7	0	0	0	37	37	126	10	1	0	0	137	138
P/TOT	255	35	1	0	0	291	292	67	11	0	0	3	81	84	445	36	4	2	10	497	512

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	7	1	0	0	1	9	10	15	1	0	0	0	16	16	61	5	2	1	1	70	73
16:15	13	1	0	0	0	14	14	15	2	0	0	0	17	17	60	9	1	0	1	71	73
16:30	12	1	0	0	1	14	15	9	4	1	0	0	14	15	72	4	0	0	0	76	76
16:45	15	0	0	0	0	15	15	11	2	0	0	1	14	15	66	5	1	0	1	73	75
H/TOT	47	3	0	0	2	52	54	50	9	1	0	1	61	63	259	23	4	1	3	290	296
17:00	11	0	1	0	0	12	13	19	4	0	0	0	23	23	94	9	0	0	0	103	103
17:15	13	1	0	0	1	15	16	22	3	0	0	0	25	25	88	6	0	0	0	94	94
17:30	11	3	0	0	0	14	14	23	2	0	0	0	25	25	73	9	1	0	0	83	84
17:45	10	0	0	0	0	10	10	20	3	0	0	0	23	23	77	10	0	0	0	87	87
H/TOT	45	4	1	0	1	51	53	84	12	0	0	0	96	96	332	34	1	0	0	367	368
18:00	21	1	0	0	1	23	24	22	1	0	0	1	24	25	67	4	1	0	0	72	73
18:15	15	3	0	0	0	18	18	27	0	0	0	0	27	27	72	4	1	0	0	77	78
18:30	14	0	0	0	0	14	14	25	1	0	0	0	26	26	60	3	0	0	0	63	63
18:45	12	0	0	0	0	12	12	27	2	0	0	0	29	29	59	5	0	0	0	64	64
H/TOT	62	4	0	0	1	67	68	101	4	0	0	1	106	107	258	16	2	0	0	276	277

P/TOT	154	11	1	0	4	170	175	235	25	1	0	2	263	266	849	73	7	1	3	933	941

PCU's Through Junction
86
112
119
142
459
180
212
193
188
773
178
141
99
97
515
1746

PCU's Through Junction
173
166
174
160
673
202
200
179
179
759
195
174
156
172
696

2128

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 03 DATE: 3rd March 2020

LOCATION: Garter Lane/Fortunestown Lane DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	12	6	0	0	0	18	18	15	4	2	0	1	22	24	67	8	2	0	0	77	78
07:15	10	0	0	0	1	11	12	29	4	0	0	0	33	33	62	11	1	0	3	77	81
07:30	9	2	1	0	0	12	13	28	4	2	0	0	34	35	76	11	1	0	0	88	89
07:45	13	3	0	0	0	16	16	31	2	0	0	0	33	33	88	10	3	0	2	103	107
H/TOT	44	11	1	0	1	57	59	103	14	4	0	1	122	125	293	40	7	0	5	345	354
08:00	25	3	0	0	0	28	28	29	6	1	0	0	36	37	85	13	1	1	2	102	106
08:15	28	4	0	0	0	32	32	28	3	0	0	1	32	33	86	5	0	0	1	92	93
08:30	26	2	1	0	0	29	30	29	3	1	0	1	34	36	63	10	1	0	1	75	77
08:45	24	2	1	0	0	27	28	35	5	1	0	1	42	44	42	3	0	0	1	46	47
H/TOT	103	11	2	0	0	116	117	121	17	3	0	3	144	149	276	31	2	1	5	315	322
09:00	10	3	1	0	0	14	15	20	8	1	1	0	30	32	57	7	0	0	1	65	66
09:15	12	4	0	0	0	16	16	23	4	3	0	2	32	36	49	7	0	0	0	56	56
09:30	4	1	2	0	0	7	8	22	1	0	0	1	24	25	30	5	1	0	0	36	37
09:45	5	2	0	0	0	7	7	26	5	1	0	2	34	37	27	9	0	0	0	36	36
H/TOT	31	10	3	0	0	44	46	91	18	5	1	5	120	129	163	28	1	0	1	193	195
P/TOT	178	32	6	0	1	217	221	315	49	12	1	9	386	402	732	99	10	1	11	853	870

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	23	2	0	0	1	26	27	57	11	1	1	1	71	74	28	3	1	1	2	35	39
16:15	15	4	1	1	0	21	23	65	13	1	1	2	82	86	24	4	0	0	0	28	28
16:30	18	2	0	0	0	20	20	56	12	1	1	0	70	72	28	4	0	1	1	34	36
16:45	17	2	0	0	0	19	19	67	11	0	1	0	79	80	29	4	0	0	0	33	33
H/TOT	73	10	1	1	1	86	89	245	47	3	4	3	302	312	109	15	1	2	3	130	136
17:00	15	5	0	0	0	20	20	63	7	0	0	1	71	72	26	3	0	1	0	30	31
17:15	24	4	0	0	0	28	28	57	7	1	0	1	66	68	22	4	0	0	0	26	26
17:30	32	0	0	0	0	32	32	76	10	0	0	1	87	88	21	1	0	0	1	23	24
17:45	19	0	1	0	0	20	21	73	7	1	0	0	81	82	25	2	1	0	3	31	35
H/TOT	90	9	1	0	0	100	101	269	31	2	0	3	305	309	94	10	1	1	4	110	116
18:00	29	2	0	0	0	31	31	76	12	0	0	2	90	92	35	2	1	0	0	38	39
18:15	12	1	0	0	0	13	13	85	8	1	0	1	95	97	33	2	0	0	0	35	35
18:30	11	2	1	0	0	14	15	76	10	2	0	1	89	91	41	1	1	0	2	45	48
18:45	15	1	0	0	0	16	16	63	8	2	0	0	73	74	31	4	0	0	0	35	35
H/TOT	67	6	1	0	0	74	75	300	38	5	0	4	347	354	140	9	2	0	2	153	156

P/TOT	230	25	3	1	1	260	264	814	116	10	4	10	954	974	343	34	4	3	9	393	408

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 03 DATE: 3rd March 2020

LOCATION: Garter Lane/Fortunestown Lane DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	36	5	0	0	1	42	43	8	1	0	0	0	9	9	9	5	0	0	0	14	14
07:15	46	9	0	0	1	56	57	10	1	0	0	0	11	11	14	2	0	0	0	16	16
07:30	49	3	0	1	1	54	56	19	4	0	0	1	24	25	18	3	0	0	0	21	21
07:45	52	9	0	0	0	61	61	18	2	0	0	1	21	22	27	4	0	0	1	32	33
H/TOT	183	26	0	1	3	213	217	55	8	0	0	2	65	67	68	14	0	0	1	83	84
08:00	50	6	0	0	0	56	56	22	1	0	0	1	24	25	13	6	0	0	1	20	21
08:15	83	5	1	0	3	92	96	24	3	0	0	1	28	29	35	2	0	0	0	37	37
08:30	63	5	0	0	1	69	70	46	3	1	0	0	50	51	35	2	0	0	3	40	43
08:45	58	6	1	0	0	65	66	70	2	0	0	0	72	72	30	2	1	0	0	33	34
H/TOT	254	22	2	0	4	282	287	162	9	1	0	2	174	177	113	12	1	0	4	130	135
09:00	69	11	0	0	1	81	82	41	1	0	0	0	42	42	20	3	0	0	1	24	25
09:15	54	2	1	0	0	57	58	29	3	1	0	0	33	34	15	1	0	0	1	17	18
09:30	28	8	0	0	0	36	36	13	1	1	0	0	15	16	11	2	0	0	0	13	13
09:45	29	3	1	0	0	33	34	24	2	0	1	0	27	28	12	0	1	0	0	13	14
H/TOT	180	24	2	0	1	207	209	107	7	2	1	0	117	119	58	6	1	0	2	67	70
P/TOT	617	72	4	1	8	702	713	324	24	3	1	4	356	363	239	32	2	0	7	280	288

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	45	3	0	0	2	50	52	38	4	0	0	0	42	42	43	6	4	2	0	55	60
16:15	31	4	0	1	1	37	39	36	2	0	0	1	39	40	32	7	0	0	1	40	41
16:30	31	5	0	0	0	36	36	50	3	0	0	0	53	53	43	7	0	0	0	50	50
16:45	32	5	0	0	0	37	37	44	3	0	0	0	47	47	41	3	0	1	1	46	48
H/TOT	139	17	0	1	3	160	164	168	12	0	0	1	181	182	159	23	4	3	2	191	199
17:00	41	3	0	1	0	45	46	38	5	0	0	0	43	43	58	4	1	0	0	63	64
17:15	29	4	0	0	0	33	33	45	2	0	0	0	47	47	67	6	0	1	0	74	75
17:30	42	2	0	0	0	44	44	45	2	0	0	0	47	47	57	5	1	0	0	63	64
17:45	54	3	0	0	0	57	57	43	5	0	0	0	48	48	49	9	0	1	0	59	60
H/TOT	166	12	0	1	0	179	180	171	14	0	0	0	185	185	231	24	2	2	0	259	263
18:00	45	5	0	0	0	50	50	32	2	0	0	0	34	34	42	5	1	0	0	48	49
18:15	31	1	1	0	0	33	34	36	3	1	0	0	40	41	29	2	0	0	0	31	31
18:30	40	2	0	0	1	43	44	33	3	0	0	0	36	36	34	3	0	0	1	38	39
18:45	41	6	0	0	0	47	47	41	4	0	0	0	45	45	23	2	0	0	0	25	25
H/TOT	157	14	1	0	1	173	175	142	12	1	0	0	155	156	128	12	1	0	1	142	144

P/TOT	462	43	1	2	4	512	519	481	38	1	0	1	521	523	518	59	7	5	3	592	605

PCU's Through Junction
186
210
238
272
905
272
320
305
289
1186
261
217
134
155
767
2858

PCU's Through Junction
293
257
267
265
1082
276
277
299
302
1153
294
250
272
242
1058

3293

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 04 DATE: 3rd March 2020

LOCATION: Mill Road/Slade Road/Boherboy Road/Garter Lane DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	29	4	2	0	0	35	36	45	12	0	0	1	58	59	3	0	0	0	0	3	3
07:15	45	8	0	0	1	54	55	65	8	1	0	0	74	75	3	1	1	0	0	5	6
07:30	40	4	0	0	1	45	46	47	6	0	0	0	53	53	3	3	0	0	0	6	6
07:45	52	10	0	0	1	63	64	33	12	0	1	1	47	49	6	2	0	0	0	8	8
H/TOT	166	26	2	0	3	197	201	190	38	1	1	2	232	236	15	6	1	0	0	22	23
08:00	34	4	0	0	1	39	40	25	9	1	1	2	38	42	4	0	0	0	0	4	4
08:15	58	2	1	0	1	62	64	39	3	1	1	2	46	50	2	1	1	0	0	4	5
08:30	41	7	0	0	0	48	48	37	9	1	0	0	47	48	6	0	0	0	0	6	6
08:45	51	6	0	0	0	57	57	42	5	1	1	0	49	51	3	0	0	0	0	3	3
H/TOT	184	19	1	0	2	206	209	143	26	4	3	4	180	190	15	1	1	0	0	17	18
09:00	38	4	0	0	1	43	44	48	5	1	2	0	56	59	2	1	0	0	0	3	3
09:15	45	3	0	0	0	48	48	60	5	2	1	0	68	70	3	2	0	0	0	5	5
09:30	19	4	0	0	1	24	25	43	6	0	0	0	49	49	2	0	0	0	1	3	4
09:45	33	3	1	0	0	37	38	25	9	1	0	0	35	36	5	3	2	0	0	10	11
H/TOT	135	14	1	0	2	152	155	176	25	4	3	0	208	214	12	6	2	0	1	21	23
P/TOT	485	59	4	0	7	555	564	509	89	9	7	6	620	640	42	13	4	0	1	60	63

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	31	1	0	1	3	36	40	41	7	0	1	0	49	50	10	1	0	0	0	11	11
16:15	25	4	1	1	0	31	33	43	5	0	0	0	48	48	11	5	0	0	1	17	18
16:30	34	2	0	0	1	37	38	54	4	1	0	0	59	60	6	1	1	0	1	9	11
16:45	23	6	0	0	0	29	29	42	6	0	0	0	48	48	13	1	0	0	0	14	14
H/TOT	113	13	1	2	4	133	140	180	22	1	1	0	204	206	40	8	1	0	2	51	54
17:00	26	4	0	1	0	31	32	38	5	0	0	0	43	43	16	4	0	1	0	21	22
17:15	36	5	0	0	1	42	43	45	5	0	1	0	51	52	15	2	1	0	0	18	19
17:30	37	4	0	0	1	42	43	51	4	2	0	0	57	58	6	2	0	0	0	8	8
17:45	33	4	0	0	0	37	37	34	8	0	0	0	42	42	13	3	1	0	0	17	18
H/TOT	132	17	0	1	2	152	155	168	22	2	1	0	193	195	50	11	2	1	0	64	66
18:00	35	5	0	0	0	40	40	40	7	2	1	0	50	52	11	1	0	0	0	12	12
18:15	23	0	0	0	0	23	23	24	5	2	0	0	31	32	13	4	1	0	0	18	19
18:30	24	4	0	0	1	29	30	27	5	0	1	0	33	34	13	0	0	0	0	13	13
18:45	30	4	0	0	0	34	34	32	5	0	0	0	37	37	10	0	0	0	1	11	12
H/TOT	112	13	0	0	1	126	127	123	22	4	2	0	151	156	47	5	1	0	1	54	56

P/TOT	357	43	1	3	7	411	422	471	66	7	4	0	548	557	137	24	4	1	3	169	175

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 04 DATE: 3rd March 2020

LOCATION: Mill Road/Slade Road/Boherboy Road/Garter Lane DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	15	0	0	0	0	15	15	55	10	0	0	1	66	67	10	2	2	1	3	18	23
07:15	12	1	2	0	0	15	16	43	4	0	0	2	49	51	13	2	0	0	0	15	15
07:30	16	1	1	0	1	19	21	54	3	0	0	2	59	61	23	1	2	0	0	26	27
07:45	12	2	1	0	0	15	16	48	9	1	0	0	58	59	12	0	0	0	1	13	14
H/TOT	55	4	4	0	1	64	67	200	26	1	0	5	232	238	58	5	4	1	4	72	79
08:00	20	3	0	0	0	23	23	65	9	0	1	0	75	76	10	1	1	0	0	12	13
08:15	15	6	0	0	0	21	21	64	4	0	0	1	69	70	11	0	0	0	0	11	11
08:30	18	2	0	0	0	20	20	26	4	1	0	0	31	32	11	0	0	0	0	11	11
08:45	10	2	0	0	0	12	12	32	4	1	0	0	37	38	17	1	0	0	0	18	18
H/TOT	63	13	0	0	0	76	76	187	21	2	1	1	212	215	49	2	1	0	0	52	53
09:00	9	1	0	0	0	10	10	27	3	0	0	0	30	30	16	1	1	0	0	18	19
09:15	10	4	0	0	0	14	14	28	1	1	0	0	30	31	5	0	0	0	0	5	5
09:30	11	4	1	0	0	16	17	17	4	0	0	0	21	21	3	1	0	0	0	4	4
09:45	7	3	0	0	0	10	10	12	3	0	0	0	15	15	5	3	1	0	1	10	12
H/TOT	37	12	1	0	0	50	51	84	11	1	0	0	96	97	29	5	2	0	1	37	39
P/TOT	155	29	5	0	1	190	194	471	58	4	1	6	540	549	136	12	7	1	5	161	171

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	7	2	0	0	0	9	9	15	0	0	0	1	16	17	11	1	1	0	0	13	14
16:15	11	2	1	1	0	15	17	9	0	0	0	0	9	9	9	1	0	0	0	10	10
16:30	9	7	1	0	0	17	18	11	1	0	0	0	12	12	7	0	1	0	0	8	9
16:45	6	3	0	0	0	9	9	7	4	0	0	0	11	11	4	1	0	0	0	5	5
H/TOT	33	14	2	1	0	50	52	42	5	0	0	1	48	49	31	3	2	0	0	36	37
17:00	10	4	0	0	0	14	14	11	1	0	0	0	12	12	3	1	0	0	0	4	4
17:15	8	4	0	0	0	12	12	8	1	0	0	0	9	9	7	1	0	0	0	8	8
17:30	12	0	0	0	0	12	12	13	2	0	0	0	15	15	10	1	1	0	0	12	13
17:45	10	1	0	0	0	11	11	10	0	1	0	0	11	12	7	0	1	0	0	8	9
H/TOT	40	9	0	0	0	49	49	42	4	1	0	0	47	48	27	3	2	0	0	32	33
18:00	9	0	0	0	0	9	9	12	1	2	0	0	15	16	8	0	0	0	0	8	8
18:15	9	1	0	0	0	10	10	19	1	0	0	1	21	22	9	0	0	0	0	9	9
18:30	5	2	0	0	0	7	7	15	1	0	0	0	16	16	1	1	0	0	0	2	2
18:45	14	2	1	0	0	17	18	23	1	0	0	0	24	24	6	0	0	0	0	6	6
H/TOT	37	5	1	0	0	43	44	69	4	2	0	1	76	78	24	1	0	0	0	25	25

P/TOT	110	28	3	1	0	142	145	153	13	3	0	2	171	175	82	7	4	0	0	93	95

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 04 DATE: 3rd March 2020

LOCATION: Mill Road/Slade Road/Boherboy Road/Garter Lane DAY: Tuesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	1	0	0	0	0	1	1	13	3	0	1	0	17	18	4	2	0	0	0	6	6
07:15	3	0	1	0	0	4	5	20	3	0	2	0	25	28	10	1	0	0	0	11	11
07:30	5	0	0	0	1	6	7	37	7	0	1	0	45	46	16	0	0	1	0	17	18
07:45	2	1	1	0	0	4	5	35	5	1	1	0	42	44	32	1	1	0	0	34	35
H/TOT	11	1	2	0	1	15	17	105	18	1	5	0	129	136	62	4	1	1	0	68	70
08:00	2	1	0	0	0	3	3	37	4	0	0	0	41	41	26	0	0	0	1	27	28
08:15	0	1	0	0	0	1	1	57	3	0	1	0	61	62	28	4	0	0	0	32	32
08:30	4	0	0	0	0	4	4	53	7	0	0	0	60	60	34	2	0	0	2	38	40
08:45	4	0	0	0	0	4	4	55	2	0	0	0	57	57	29	3	0	0	2	34	36
H/TOT	10	2	0	0	0	12	12	202	16	0	1	0	219	220	117	9	0	0	5	131	136
09:00	2	2	0	0	0	4	4	44	3	1	0	1	49	51	18	2	0	0	0	20	20
09:15	4	3	0	0	0	7	7	30	3	2	0	0	35	36	20	2	0	0	0	22	22
09:30	5	2	0	0	2	9	11	25	5	3	0	0	33	35	12	0	1	0	0	13	14
09:45	3	0	0	0	0	3	3	20	2	4	0	1	27	30	12	0	0	0	0	12	12
H/TOT	14	7	0	0	2	23	25	119	13	10	0	2	144	151	62	4	1	0	0	67	68
P/TOT	35	10	2	0	3	50	54	426	47	11	6	2	492	507	241	17	2	1	5	266	273

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	12	2	0	0	0	14	14	38	7	4	2	0	51	56	11	1	0	0	0	12	12
16:15	11	1	0	0	0	12	12	50	20	2	0	0	72	73	17	1	0	0	0	18	18
16:30	17	1	0	0	0	18	18	61	12	1	0	0	74	75	17	1	0	0	0	18	18
16:45	18	0	0	0	0	18	18	52	12	2	0	0	66	67	14	1	0	0	0	15	15
H/TOT	58	4	0	0	0	62	62	201	51	9	2	0	263	270	59	4	0	0	0	63	63
17:00	8	2	1	1	0	12	14	73	26	1	1	0	101	103	8	3	0	0	0	11	11
17:15	11	2	0	0	0	13	13	60	8	0	0	0	68	68	8	0	0	0	0	8	8
17:30	17	0	0	0	0	17	17	77	9	1	0	0	87	88	15	0	0	0	0	15	15
17:45	16	1	0	0	0	17	17	62	12	0	0	1	75	76	15	1	0	0	1	17	18
H/TOT	52	5	1	1	0	59	61	272	55	2	1	1	331	334	46	4	0	0	1	51	52
18:00	11	1	0	0	1	13	14	62	14	0	0	0	76	76	11	2	0	0	0	13	13
18:15	6	2	0	0	1	9	10	60	8	1	1	0	70	72	20	0	1	0	0	21	22
18:30	9	1	1	0	0	11	12	56	7	2	0	0	65	66	11	0	0	0	0	11	11
18:45	6	1	0	0	0	7	7	52	6	0	0	0	58	58	15	3	0	0	0	18	18
H/TOT	32	5	1	0	2	40	43	230	35	3	1	0	269	272	57	5	1	0	0	63	64

P/TOT	142	14	2	1	2	161	165	703	141	14	4	1	863	876	162	13	1	0	1	177	179

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 04 DATE: 3rd March 2020

LOCATION: Mill Road/Slade Road/Boherboy Road/Garter Lane DAY: Tuesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	5	1	0	0	0	6	6	10	1	0	0	0	11	11	2	1	0	0	1	4	5
07:15	8	1	0	0	0	9	9	7	2	0	0	0	9	9	3	0	0	0	0	3	3
07:30	4	1	0	0	0	5	5	10	2	1	0	0	13	14	4	3	0	0	1	8	9
07:45	11	1	0	0	0	12	12	7	1	0	0	1	9	10	3	1	0	0	0	4	4
H/TOT	28	4	0	0	0	32	32	34	6	1	0	1	42	44	12	5	0	0	2	19	21
08:00	12	2	0	0	0	14	14	5	1	0	0	1	7	8	3	0	0	0	0	3	3
08:15	12	2	0	0	0	14	14	13	1	1	0	0	15	16	3	1	0	0	0	4	4
08:30	13	1	0	0	1	15	16	16	3	1	0	1	21	23	12	0	0	0	1	13	14
08:45	29	0	0	0	0	29	29	5	2	2	0	1	10	12	3	0	0	0	0	3	3
H/TOT	66	5	0	0	1	72	73	39	7	4	0	3	53	58	21	1	0	0	1	23	24
09:00	29	2	0	1	1	33	35	7	4	1	0	0	12	13	16	0	0	0	0	16	16
09:15	20	1	1	0	0	22	23	11	6	1	0	2	20	23	6	0	0	0	1	7	8
09:30	7	0	1	0	0	8	9	12	0	0	0	0	12	12	3	0	0	0	0	3	3
09:45	5	3	1	1	0	10	12	9	2	0	0	1	12	13	7	2	1	0	0	10	11
H/TOT	61	6	3	2	1	73	78	39	12	2	0	3	56	60	32	2	1	0	1	36	38
P/TOT	155	15	3	2	2	177	183	112	25	7	0	7	151	162	65	8	1	0	4	78	83

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	24	3	0	1	0	28	29	32	6	0	1	1	40	42	7	2	0	0	0	9	9
16:15	25	2	0	1	0	28	29	36	7	0	0	2	45	47	9	2	0	0	0	11	11
16:30	19	1	0	1	0	21	22	32	9	0	0	0	41	41	7	1	0	0	0	8	8
16:45	27	2	0	0	0	29	29	39	5	1	0	0	45	46	9	0	0	0	0	9	9
H/TOT	95	8	0	3	0	106	110	139	27	1	1	3	171	176	32	5	0	0	0	37	37
17:00	17	2	0	0	0	19	19	43	4	0	0	0	47	47	6	0	0	0	1	7	8
17:15	24	1	0	0	0	25	25	35	4	1	0	0	40	41	4	3	0	0	0	7	7
17:30	24	0	0	0	0	24	24	44	5	0	0	0	49	49	8	1	0	0	0	9	9
17:45	28	3	0	0	0	31	31	45	6	0	0	0	51	51	5	3	0	0	0	8	8
H/TOT	93	6	0	0	0	99	99	167	19	1	0	0	187	188	23	7	0	0	1	31	32
18:00	18	1	0	0	0	19	19	40	4	1	0	1	46	48	7	0	0	0	0	7	7
18:15	21	0	0	0	0	21	21	38	5	1	0	0	44	45	9	0	0	0	1	10	11
18:30	20	1	1	0	0	22	23	32	3	0	0	0	35	35	11	0	0	0	1	12	13
18:45	18	1	0	0	0	19	19	34	3	1	0	0	38	39	5	0	0	0	0	5	5
H/TOT	77	3	1	0	0	81	82	144	15	3	0	1	163	166	32	0	0	0	2	34	36

P/TOT	265	17	1	3	0	286	290	450	61	5	1	4	521	529	87	12	0	0	3	102	105

PCU's Through Junction
251
281
313
318
1162
295
349
321
319
1283
303
291
202
201
997
3442

PCU's Through Junction
303
325
328
300
1256
329
304
350
329
1312
314
294
261
276
1145

3713

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 05 DATE: 3rd March 2020

LOCATION: Boherboy Road DAY: Tuesday

	MOVEMENT 1							**MOVEMENT 2**						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	47	14	1	0	4	66	71	14	1	0	1	0	16	17
07:15	71	10	2	1	0	84	86	25	1	1	0	0	27	28
07:30	72	9	0	0	1	82	83	39	4	1	1	1	46	49
07:45	52	11	0	1	2	66	69	29	4	2	0	0	35	36
H/TOT	242	44	3	2	7	298	309	107	10	4	2	1	124	130
08:00	38	12	3	1	1	55	59	37	4	1	1	1	44	47
08:15	46	6	1	1	1	55	58	59	4	0	1	0	64	65
08:30	53	6	1	0	0	60	61	89	4	0	0	3	96	99
08:45	66	5	1	1	0	73	75	50	8	0	0	1	59	60
H/TOT	203	29	6	3	2	243	252	235	20	1	2	5	263	271
09:00	73	9	2	1	1	86	89	27	3	3	0	1	34	37
09:15	78	4	1	1	0	84	86	26	5	2	0	1	34	36
09:30	47	10	4	0	0	61	63	25	8	3	1	0	37	40
09:45	32	6	3	0	0	41	43	22	1	2	0	0	25	26
H/TOT	230	29	10	2	1	272	281	100	17	10	1	2	130	138
P/TOT	675	102	19	7	10	813	842	442	47	15	5	8	517	539

	MOVEMENT 1							**MOVEMENT 2**						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	57	5	1	0	0	63	64	58	12	2	2	0	74	78
16:15	42	7	0	0	0	49	49	62	16	1	0	0	79	80
16:30	39	3	2	0	0	44	45	65	12	1	0	0	78	79
16:45	59	4	0	0	0	63	63	77	19	3	0	0	99	101
H/TOT	197	19	3	0	0	219	221	262	59	7	2	0	330	336
17:00	40	9	0	0	0	49	49	71	20	1	1	0	93	95
17:15	49	5	0	1	0	55	56	84	13	0	0	0	97	97
17:30	59	3	1	0	0	63	64	92	14	1	0	1	108	110
17:45	42	5	0	0	0	47	47	69	17	0	1	1	88	90
H/TOT	190	22	1	1	0	214	216	316	64	2	2	2	386	392
18:00	53	9	1	0	0	63	64	57	5	0	1	0	63	64
18:15	36	4	0	0	0	40	40	59	8	1	0	1	69	71
18:30	36	2	1	0	0	39	40	53	6	0	1	0	60	61
18:45	33	3	0	0	0	36	36	52	2	0	0	0	54	54
H/TOT	158	18	2	0	0	178	179	221	21	1	2	1	246	250

P/TOT	545	59	6	1	0	611	615	799	144	10	6	3	962	978

PCU's Through Junction
88
114
132
105
439
106
123
160
135
523
126
122
103
69
419
1381

PCU's Through Junction
141
129
124
164
557
144
153
173
137
607
128
111
101
90
429

1593

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 06 DATE: 3rd March 2020

LOCATION: Boherboy Road/Blessington Road DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	47	14	1	0	4	66	71	0	0	0	0	0	0	0	0	0	0	1	0	1	2
07:15	71	10	2	0	0	83	84	0	0	0	1	0	1	2	1	0	0	0	0	1	1
07:30	72	9	0	0	1	82	83	0	0	0	0	0	0	0	0	1	0	1	0	2	3
07:45	52	11	0	0	2	65	67	0	0	0	1	0	1	2	0	1	0	0	0	1	1
H/TOT	242	44	3	0	7	296	305	0	0	0	2	0	2	5	1	2	0	2	0	5	8
08:00	38	12	2	0	1	53	55	0	0	1	1	0	2	4	1	0	1	0	0	2	3
08:15	46	5	1	0	1	53	55	0	1	0	1	0	2	3	0	0	0	0	0	0	0
08:30	53	6	1	0	0	60	61	0	0	0	0	0	0	0	1	1	0	0	1	3	4
08:45	66	5	0	0	0	71	71	0	0	1	1	0	2	4	2	1	0	0	0	3	3
H/TOT	203	28	4	0	2	237	241	0	1	2	3	0	6	11	4	2	1	0	1	8	10
09:00	71	7	1	0	1	80	82	2	2	1	1	0	6	8	4	0	1	0	0	5	6
09:15	77	4	1	0	0	82	83	1	0	0	1	0	2	3	0	1	0	0	0	1	1
09:30	46	10	3	0	0	59	61	1	0	1	0	0	2	3	0	1	1	0	0	2	3
09:45	32	6	3	0	0	41	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	226	27	8	0	1	262	267	4	2	2	2	0	10	14	4	2	2	0	0	8	9
P/TOT	671	99	15	0	10	795	813	4	3	4	7	0	18	29	9	6	3	2	1	21	26

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	55	5	0	0	0	60	60	2	0	1	0	0	3	4	0	0	2	0	0	2	3
16:15	42	6	0	0	0	48	48	0	1	0	0	0	1	1	1	0	0	0	0	1	1
16:30	39	3	2	0	0	44	45	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	59	4	0	0	0	63	63	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	195	18	2	0	0	215	216	2	1	1	0	0	4	5	4	0	2	0	0	6	7
17:00	38	9	0	0	0	47	47	2	0	0	0	0	2	2	1	1	0	0	0	2	2
17:15	49	5	0	1	0	55	56	0	0	0	0	0	0	0	4	0	0	0	0	4	4
17:30	56	3	0	0	0	59	59	3	0	1	0	0	4	5	1	0	0	0	0	1	1
17:45	41	5	0	0	0	46	46	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	184	22	0	1	0	207	208	6	0	1	0	0	7	8	8	1	0	0	0	9	9
18:00	52	9	1	0	0	62	63	1	0	0	0	0	1	1	1	1	0	1	0	3	4
18:15	36	4	0	0	0	40	40	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:30	36	2	1	0	0	39	40	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:45	33	3	0	0	0	36	36	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	157	18	2	0	0	177	178	1	0	0	0	0	1	1	6	2	0	1	0	9	10

P/TOT	536	58	4	1	0	599	602	9	1	2	0	0	12	13	18	3	2	1	0	24	26

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 06 DATE: 3rd March 2020

LOCATION: Boherboy Road/Blessington Road DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	109	19	4	12	0	144	162	26	5	1	3	1	36	41	14	1	0	0	0	15	15
07:15	104	18	4	19	1	146	174	20	7	2	7	2	38	50	24	1	1	0	0	26	27
07:30	91	14	3	27	3	138	178	22	3	1	3	2	31	37	39	3	1	0	1	44	46
07:45	101	28	1	8	3	141	155	10	6	1	13	1	31	49	29	3	2	0	0	34	35
H/TOT	405	79	12	66	7	569	668	78	21	5	26	6	136	178	106	8	4	0	1	119	122
08:00	127	10	1	12	3	153	172	18	9	2	9	0	38	51	36	4	0	1	1	42	44
08:15	78	9	5	9	2	103	119	22	1	2	17	1	43	67	59	4	0	1	0	64	65
08:30	100	14	5	15	0	134	156	22	7	3	8	0	40	52	88	3	0	0	2	93	95
08:45	88	12	3	14	1	118	139	23	6	1	11	2	43	60	48	7	0	0	1	56	57
H/TOT	393	45	14	50	6	508	586	85	23	8	45	3	164	230	231	18	0	2	4	255	262
09:00	69	5	3	7	1	85	97	23	3	0	11	0	37	51	23	3	2	0	1	29	31
09:15	99	9	3	11	0	122	138	27	9	1	11	0	48	63	26	4	2	0	1	33	35
09:30	68	10	2	6	2	88	99	29	6	1	12	2	50	68	25	7	2	1	0	35	37
09:45	70	10	1	7	0	88	98	32	8	1	12	0	53	69	22	1	2	0	0	25	26
H/TOT	306	34	9	31	3	383	431	111	26	3	46	2	188	251	96	15	8	1	2	122	129
P/TOT	1104	158	35	147	16	1460	1685	274	70	16	117	11	488	659	433	41	12	3	7	496	513

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	31	6	1	2	2	42	47	74	6	1	15	0	96	116	58	12	0	2	0	72	75
16:15	40	8	1	4	0	53	59	76	11	1	7	1	96	107	61	16	1	0	0	78	79
16:30	25	6	1	4	1	37	44	93	15	4	6	1	119	130	64	12	1	0	0	77	78
16:45	32	4	3	4	2	45	54	105	12	3	7	4	131	146	75	19	3	0	0	97	99
H/TOT	128	24	6	14	5	177	203	348	44	9	35	6	442	498	258	59	5	2	0	324	329
17:00	13	2	2	0	0	17	18	110	18	4	1	0	133	136	70	19	1	1	0	91	93
17:15	45	13	3	2	0	63	67	101	17	3	4	0	125	132	80	13	0	0	0	93	93
17:30	47	4	1	1	1	54	57	96	11	1	2	0	110	113	91	14	1	0	1	107	109
17:45	46	7	0	0	2	55	57	98	12	1	1	2	114	118	67	17	0	1	1	86	88
H/TOT	151	26	6	3	3	189	199	405	58	9	8	2	482	499	308	63	2	2	2	377	383
18:00	28	9	0	0	0	37	37	92	18	0	1	0	111	112	56	4	0	0	0	60	60
18:15	34	4	1	0	0	39	40	77	19	0	0	1	97	98	57	8	1	0	1	67	69
18:30	37	5	0	0	0	42	42	107	8	2	4	0	121	127	52	5	0	1	0	58	59
18:45	40	0	0	0	2	42	44	79	1	0	1	0	81	82	50	2	0	0	0	52	52
H/TOT	139	18	1	0	2	160	163	355	46	2	6	1	410	420	215	19	1	1	1	237	240

P/TOT	418	68	13	17	10	526	565	1108	148	20	49	9	1334	1417	781	141	8	5	3	938	952

PCU's Through Junction
291
338
347
310
1285
328
309
367
333
1339
274
322
270
235
1101
3724

PCU's Through Junction
304
294
297
363
1258
298
352
343
312
1305
277
248
270
216
1011

3574

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 07 DATE: 3rd March 2020

LOCATION: Citywest Road/Blessington Road DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	28	4	1	0	1	34	36	14	1	1	1	1	18	21	51	9	1	8	0	69	80
07:15	30	5	2	1	3	41	46	13	3	3	5	0	24	32	45	7	3	11	1	67	84
07:30	35	6	1	0	2	44	47	12	3	1	1	0	17	19	58	7	2	16	0	83	105
07:45	51	5	0	0	2	58	60	8	2	1	8	1	20	32	60	19	1	6	0	86	94
H/TOT	144	20	4	1	8	177	188	47	9	6	15	2	79	104	214	42	7	41	1	305	363
08:00	27	4	0	1	1	33	35	10	7	0	4	0	21	26	70	4	1	10	1	86	101
08:15	32	3	1	1	2	39	43	23	1	2	4	0	30	36	45	5	2	8	1	61	73
08:30	20	10	1	0	1	32	34	40	4	1	6	1	52	61	38	10	3	6	0	57	66
08:45	28	7	1	0	1	37	39	30	4	0	9	1	44	57	60	2	1	6	0	69	77
H/TOT	107	24	3	2	5	141	150	103	16	3	23	2	147	180	213	21	7	30	2	273	318
09:00	23	5	0	0	2	30	32	11	1	1	7	1	21	32	49	3	1	2	1	56	60
09:15	33	5	1	1	1	41	44	12	4	0	6	0	22	30	54	2	1	6	0	63	71
09:30	32	2	0	0	0	34	34	16	3	2	6	0	27	36	30	7	1	4	0	42	48
09:45	27	1	2	0	2	32	35	9	3	0	7	0	19	28	30	4	1	5	0	40	47
H/TOT	115	13	3	1	5	137	145	48	11	3	26	1	89	125	163	16	4	17	1	201	226
P/TOT	366	57	10	4	18	455	483	198	36	12	64	5	315	409	590	79	18	88	4	779	906

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	23	4	1	1	1	30	33	33	8	1	8	0	50	61	33	3	1	2	1	40	44
16:15	32	7	0	1	3	43	47	27	6	0	3	1	37	42	25	6	0	2	0	33	36
16:30	41	5	0	1	3	50	54	45	6	3	4	0	58	65	17	3	3	3	0	26	31
16:45	30	5	0	1	1	37	39	45	6	4	2	0	57	62	18	1	1	1	1	22	25
H/TOT	126	21	1	4	8	160	174	150	26	8	17	1	202	229	93	13	5	8	2	121	136
17:00	46	4	1	0	1	52	54	45	5	4	0	0	54	56	12	1	0	0	0	13	13
17:15	34	4	0	0	1	39	40	38	10	2	1	0	51	53	26	6	2	3	0	37	42
17:30	39	3	1	0	1	44	46	48	5	0	2	0	55	58	28	3	1	1	1	34	37
17:45	37	4	0	0	2	43	45	44	9	0	1	1	55	57	22	4	0	0	0	26	26
H/TOT	156	15	2	0	5	178	184	175	29	6	4	1	215	224	88	14	3	4	1	110	118
18:00	34	1	0	0	1	36	37	36	8	0	0	0	44	44	24	4	0	0	0	28	28
18:15	42	5	0	0	1	48	49	33	11	1	0	0	45	46	20	4	1	0	0	25	26
18:30	39	3	0	0	1	43	44	28	6	1	4	0	39	45	20	2	0	0	0	22	22
18:45	32	4	0	0	1	37	38	34	1	0	0	0	35	35	18	0	0	0	0	18	18
H/TOT	147	13	0	0	4	164	168	131	26	2	4	0	163	169	82	10	1	0	0	93	94

P/TOT	429	49	3	4	17	502	526	456	81	16	25	2	580	623	263	37	9	12	3	324	347

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS — **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — **TRA/20/062**

SITE: 07 — DATE: 3rd March 2020

LOCATION: Citywest Road/Blessington Road — DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	105	24	4	4	4	141	152	26	5	0	2	0	33	36	11	4	0	2	0	17	20
07:15	130	21	3	8	0	162	174	31	5	0	2	2	40	45	34	6	0	0	3	43	46
07:30	105	16	1	11	4	137	156	49	3	1	2	3	58	64	25	4	0	0	0	29	29
07:45	93	20	0	2	5	120	128	31	7	2	5	0	45	53	25	4	5	1	2	37	43
H/TOT	433	81	8	25	13	560	610	137	20	3	11	5	176	197	95	18	5	3	5	126	137
08:00	95	18	2	2	3	120	127	44	6	2	6	1	59	69	24	4	1	0	1	30	32
08:15	79	9	4	1	2	95	100	58	4	0	14	1	77	96	28	1	0	1	3	33	37
08:30	115	10	3	9	0	137	150	70	6	2	2	1	81	86	13	3	1	0	2	19	22
08:45	94	15	2	8	1	120	132	41	9	1	2	2	55	60	23	2	0	0	0	25	25
H/TOT	383	52	11	20	6	472	510	213	25	5	24	5	272	311	88	10	2	1	6	107	115
09:00	91	9	3	5	1	109	118	35	5	1	4	0	45	51	29	2	1	0	1	33	35
09:15	122	11	3	5	0	141	149	41	9	3	5	1	59	68	31	3	0	1	0	35	36
09:30	84	13	4	2	2	105	112	38	10	1	7	2	58	70	22	0	2	0	2	26	29
09:45	72	12	3	2	0	89	93	45	6	3	5	0	59	67	26	1	2	0	0	29	30
H/TOT	369	45	13	14	3	444	472	159	30	8	21	3	221	255	108	6	5	1	3	123	130
P/TOT	1185	178	32	59	22	1476	1591	509	75	16	56	13	669	763	291	34	12	5	14	356	383

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	53	8	0	0	1	62	63	99	10	0	9	0	118	130	42	2	1	0	1	46	48
16:15	57	8	1	2	0	68	71	110	21	2	4	0	137	143	44	7	0	1	0	52	53
16:30	47	6	0	1	1	55	57	112	21	2	2	1	138	143	41	6	2	0	1	50	52
16:45	73	7	2	3	1	86	92	135	25	2	5	4	171	183	33	5	3	0	3	44	49
H/TOT	230	29	3	6	3	271	283	456	77	6	20	5	564	598	160	20	6	1	5	192	201
17:00	39	10	2	0	0	51	52	135	32	1	2	0	170	173	43	5	0	0	1	49	50
17:15	68	12	1	0	0	81	82	143	20	1	3	0	167	171	40	5	0	1	1	47	49
17:30	75	4	0	0	0	79	79	139	20	2	0	1	162	164	33	6	0	0	0	39	39
17:45	65	8	0	0	2	75	77	121	20	1	1	2	145	149	45	5	0	1	2	53	56
H/TOT	247	34	3	0	2	286	290	538	92	5	6	3	644	657	161	21	0	2	4	188	195
18:00	56	14	1	0	0	71	72	112	14	0	1	0	127	128	46	5	0	0	1	52	53
18:15	50	4	0	0	0	54	54	101	16	0	0	2	119	121	41	2	1	0	0	44	45
18:30	53	5	1	0	0	59	60	131	7	1	1	0	140	142	43	6	0	0	2	51	53
18:45	55	3	0	0	2	60	62	95	2	0	1	0	98	99	53	1	0	1	2	57	60
H/TOT	214	26	2	0	2	244	247	439	39	1	3	2	484	490	183	14	1	1	5	204	211

P/TOT	691	89	8	6	7	801	820	1433	208	12	29	10	1692	1746	504	55	7	4	14	584	607

PCU's Through Junction
344
427
419
409
1598
389
386
418
390
1584
327
398
328
300
1353
4535

PCU's Through Junction
378
392
402
449
1621
398
437
422
410
1667
362
340
365
313
1379

4668

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 08 DATE: 3rd March 2020

LOCATION: Citywest Road/Corbally Heath DAY: Tuesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	19	13	0	1	0	33	34	33	2	1	1	2	39	43	2	0	0	0	0	2	2
07:15	24	6	0	1	1	32	34	28	5	3	5	5	46	59	6	3	0	0	0	9	9
07:30	26	4	1	1	0	32	34	28	2	2	2	1	35	40	3	1	0	0	0	4	4
07:45	50	9	1	2	0	62	65	26	3	1	7	3	40	53	7	0	0	0	1	8	9
H/TOT	119	32	2	5	1	159	168	115	12	7	15	11	160	194	18	4	0	0	1	23	24
08:00	60	12	1	3	0	76	80	14	6	1	4	2	27	35	2	0	0	0	0	2	2
08:15	97	7	0	2	1	107	111	21	1	3	5	2	32	42	6	0	0	0	0	6	6
08:30	50	8	0	2	0	60	63	25	7	1	5	1	39	47	8	1	0	0	0	9	9
08:45	43	4	1	1	0	49	51	29	5	1	9	1	45	58	7	0	0	0	0	7	7
H/TOT	250	31	2	8	1	292	304	89	19	6	23	6	143	182	23	1	0	0	0	24	24
09:00	62	4	3	6	0	75	84	28	4	1	6	2	41	51	11	2	0	0	0	13	13
09:15	76	10	1	1	0	88	90	22	3	1	7	1	34	45	3	0	0	0	0	3	3
09:30	41	7	0	0	0	48	48	35	6	2	6	0	49	58	9	0	0	0	0	9	9
09:45	22	9	5	4	0	40	48	20	3	2	5	2	32	42	4	0	1	0	0	5	6
H/TOT	201	30	9	11	0	251	270	105	16	6	24	5	156	195	27	2	1	0	0	30	31
P/TOT	570	93	13	24	2	702	742	309	47	19	62	22	459	571	68	7	1	0	1	77	79

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	28	6	1	2	0	37	40	45	6	0	11	1	63	78	7	1	0	0	0	8	8
16:15	18	1	0	2	0	21	24	50	7	2	3	4	66	75	8	1	0	0	1	10	11
16:30	33	9	3	0	0	45	47	64	7	2	4	3	80	89	13	2	0	0	0	15	15
16:45	20	4	0	0	0	24	24	62	10	3	4	1	80	88	10	2	0	0	0	12	12
H/TOT	99	20	4	4	0	127	134	221	30	7	22	9	289	330	38	6	0	0	1	45	46
17:00	31	1	2	1	0	35	37	82	6	4	0	1	93	96	19	3	0	0	0	22	22
17:15	34	1	0	2	0	37	40	75	11	2	1	1	90	93	14	2	0	0	0	16	16
17:30	24	4	0	0	0	28	28	65	11	1	2	1	80	84	16	3	0	0	0	19	19
17:45	27	5	3	0	0	35	37	73	8	0	1	3	85	89	15	2	0	0	0	17	17
H/TOT	116	11	5	3	0	135	141	295	36	7	4	6	348	363	64	10	0	0	0	74	74
18:00	31	1	0	0	0	32	32	70	10	1	0	1	82	84	22	1	0	0	0	23	23
18:15	28	0	0	0	0	28	28	49	11	0	0	1	61	62	17	1	0	0	0	18	18
18:30	30	0	0	0	0	30	30	70	4	0	5	1	80	88	13	1	0	0	0	14	14
18:45	27	2	0	0	0	29	29	61	11	0	0	1	73	74	18	2	0	0	0	20	20
H/TOT	116	3	0	0	0	119	119	250	36	1	5	4	296	307	70	5	0	0	0	75	75

P/TOT	331	34	9	7	0	381	395	766	102	15	31	19	933	1000	172	21	0	0	1	194	195

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 08 DATE: 3rd March 2020

LOCATION: Citywest Road/Corbally Heath DAY: Tuesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	8	3	0	0	0	11	11	2	0	0	0	0	2	2	6	2	0	0	0	8	8
07:15	10	2	0	0	0	12	12	2	0	0	0	0	2	2	4	0	0	0	0	4	4
07:30	15	5	0	0	0	20	20	0	0	0	0	0	0	0	11	1	0	0	0	12	12
07:45	19	1	0	0	1	21	22	3	1	0	0	1	5	6	23	1	0	0	0	24	24
H/TOT	52	11	0	0	1	64	65	7	1	0	0	1	9	10	44	4	0	0	0	48	48
08:00	19	4	0	0	0	23	23	5	0	0	0	0	5	5	13	2	0	0	0	15	15
08:15	36	0	0	0	0	36	36	9	0	0	0	0	9	9	5	0	0	0	0	5	5
08:30	21	2	0	0	0	23	23	6	2	0	0	0	8	8	6	3	0	0	0	9	9
08:45	8	0	1	0	0	9	10	5	0	0	0	0	5	5	7	1	0	0	0	8	8
H/TOT	84	6	1	0	0	91	92	25	2	0	0	0	27	27	31	6	0	0	0	37	37
09:00	12	0	0	0	0	12	12	1	0	0	0	0	1	1	6	1	0	0	0	7	7
09:15	8	1	0	0	0	9	9	1	0	0	0	0	1	1	8	2	0	0	0	10	10
09:30	7	0	0	0	0	7	7	4	0	0	0	0	4	4	7	0	0	0	0	7	7
09:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	6	0	0	0	0	6	6
H/TOT	32	1	0	0	0	33	33	6	0	0	0	0	6	6	27	3	0	0	0	30	30
P/TOT	168	18	1	0	1	188	190	38	3	0	0	1	42	43	102	13	0	0	0	115	115

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	9	1	0	0	0	10	10	3	0	0	0	0	3	3	5	1	0	0	0	6	6
16:15	7	0	0	0	0	7	7	1	0	0	0	0	1	1	5	0	0	0	0	5	5
16:30	7	2	0	0	0	9	9	1	0	0	0	1	2	3	2	0	0	0	0	2	2
16:45	12	0	0	0	0	12	12	0	0	0	0	0	0	0	2	0	1	0	0	3	4
H/TOT	35	3	0	0	0	38	38	5	0	0	0	1	6	7	14	1	1	0	0	16	17
17:00	10	1	1	0	0	12	13	2	0	0	0	0	2	2	3	2	0	0	0	5	5
17:15	11	1	0	0	0	12	12	0	0	0	0	0	0	0	2	1	0	0	0	3	3
17:30	8	1	0	0	0	9	9	3	0	0	0	0	3	3	5	0	0	0	0	5	5
17:45	4	0	0	0	0	4	4	2	0	0	0	0	2	2	7	1	0	0	0	8	8
H/TOT	33	3	1	0	0	37	38	7	0	0	0	0	7	7	17	4	0	0	0	21	21
18:00	11	1	0	0	0	12	12	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:15	8	3	0	0	0	11	11	0	0	0	0	0	0	0	7	1	0	0	0	8	8
18:30	11	0	0	0	0	11	11	3	0	0	0	0	3	3	6	0	0	0	0	6	6
18:45	11	2	0	0	0	13	13	1	1	0	0	0	2	2	4	0	0	0	0	4	4
H/TOT	41	6	0	0	0	47	47	4	1	0	0	0	5	5	21	1	0	0	0	22	22

P/TOT	109	12	1	0	0	122	123	16	1	0	0	1	18	19	52	6	1	0	0	59	60

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 08 DATE: 3rd March 2020

LOCATION: Citywest Road/Corbally Heath DAY: Tuesday

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
07:00	0	0	0	0	0	0	0	61	13	2	9	0	85	98	9	1	0	0	0	10	10
07:15	1	1	0	0	0	2	2	62	13	3	10	4	92	111	15	6	0	0	0	21	21
07:30	3	1	0	0	0	4	4	80	9	2	17	0	108	131	15	4	0	0	0	19	19
07:45	3	0	0	0	0	3	3	72	15	4	6	2	99	111	16	10	2	0	0	28	29
H/TOT	7	2	0	0	0	9	9	275	50	11	42	6	384	450	55	21	2	0	0	78	79
08:00	3	0	0	0	0	3	3	78	5	1	9	2	95	109	29	3	1	1	0	34	36
08:15	3	0	0	0	0	3	3	39	6	1	8	4	58	73	29	2	0	1	0	32	33
08:30	1	0	0	0	0	1	1	21	5	0	4	0	30	35	7	0	0	0	0	7	7
08:45	4	0	0	0	0	4	4	74	12	2	9	2	99	114	20	1	0	0	0	21	21
H/TOT	11	0	0	0	0	11	11	212	28	4	30	8	282	331	85	6	1	2	0	94	97
09:00	9	0	0	0	0	9	9	54	8	2	5	1	70	79	26	4	0	0	0	30	30
09:15	3	1	0	0	0	4	4	74	4	1	6	0	85	93	13	1	0	0	0	14	14
09:30	1	0	0	0	0	1	1	42	8	3	4	2	59	68	14	2	0	1	0	17	18
09:45	3	0	0	0	0	3	3	42	6	2	5	0	55	63	11	1	1	0	0	13	14
H/TOT	16	1	0	0	0	17	17	212	26	8	20	3	269	302	64	8	1	1	0	74	76
P/TOT	34	3	0	0	0	37	37	699	104	23	92	17	935	1083	204	35	4	3	0	246	252

	MOVEMENT 7							MOVEMENT 8							MOVEMENT 9						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**PCU**
16:00	13	0	0	0	0	13	13	45	4	1	2	2	54	59	14	1	1	0	0	16	17
16:15	8	2	0	0	0	10	10	43	8	0	3	0	54	58	18	2	0	0	0	20	20
16:30	10	2	1	0	0	13	14	43	11	3	3	1	61	67	8	2	1	0	0	11	12
16:45	10	1	1	0	0	12	13	40	5	2	1	4	52	58	3	1	0	0	0	4	4
H/TOT	41	5	2	0	0	48	49	171	28	6	9	7	221	243	43	6	2	0	0	51	52
17:00	6	2	0	0	0	8	8	36	3	0	1	1	41	43	10	1	0	0	0	11	11
17:15	15	1	0	0	0	16	16	57	9	2	2	1	71	76	4	1	0	0	0	5	5
17:30	7	0	0	0	0	7	7	39	6	1	1	1	48	51	5	2	0	0	0	7	7
17:45	6	1	0	0	0	7	7	55	8	0	1	2	66	69	11	0	0	0	0	11	11
H/TOT	34	4	0	0	0	38	38	187	26	3	5	5	226	239	30	4	0	0	0	34	34
18:00	6	0	0	0	0	6	6	61	10	0	0	1	72	73	9	1	0	0	0	10	10
18:15	8	1	0	0	0	9	9	50	7	1	0	0	58	59	6	1	1	0	0	8	9
18:30	10	2	0	0	0	12	12	47	7	0	0	2	56	58	9	0	0	0	0	9	9
18:45	5	0	0	0	0	5	5	65	4	1	0	2	72	75	7	0	0	0	0	7	7
H/TOT	29	3	0	0	0	32	32	223	28	2	0	5	258	264	31	2	1	0	0	34	35

P/TOT	104	12	2	0	0	118	119	581	82	11	14	17	705	746	104	12	3	0	0	119	121

TRAFFINOMICS LIMITED

BOHERBOY ROAD TRAFFIC COUNTS **MARCH 2019**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/062**

SITE: 08 DATE: 3rd March 2020

LOCATION: Citywest Road/Corbally Heath DAY: Tuesday

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
07:00	5	2	0	0	0	7	7	1	0	0	0	0	1	1	17	7	3	0	0	27	29
07:15	9	3	0	0	0	12	12	1	0	0	0	0	1	1	23	7	0	0	0	30	30
07:30	5	4	0	0	0	9	9	2	0	0	0	0	2	2	28	7	0	0	0	35	35
07:45	7	2	0	0	0	9	9	3	0	0	0	1	4	5	15	8	0	0	0	23	23
H/TOT	26	11	0	0	0	37	37	7	0	0	0	1	8	9	83	29	3	0	0	115	117
08:00	9	4	0	0	0	13	13	0	1	0	0	0	1	1	37	10	3	1	1	52	56
08:15	24	1	1	1	0	27	29	1	0	0	0	0	1	1	47	11	2	0	0	60	61
08:30	22	9	1	0	1	33	35	3	1	0	0	0	4	4	43	7	0	2	0	52	55
08:45	8	6	0	0	0	14	14	0	0	0	0	0	0	0	18	9	0	4	0	31	36
H/TOT	63	20	2	1	1	87	90	4	2	0	0	0	6	6	145	37	5	7	1	195	208
09:00	9	2	0	0	0	11	11	1	0	0	0	0	1	1	21	8	1	3	0	33	37
09:15	12	3	0	0	0	15	15	1	0	0	0	0	1	1	23	7	2	3	0	35	40
09:30	11	1	0	0	0	12	12	1	0	0	0	0	1	1	32	2	1	2	0	37	40
09:45	10	0	1	1	0	12	14	0	0	0	0	0	0	0	15	4	0	2	0	21	24
H/TOT	42	6	1	1	0	50	52	3	0	0	0	0	3	3	91	21	4	10	0	126	141
P/TOT	131	37	3	2	1	174	179	14	2	0	0	1	17	18	319	87	12	17	1	436	465

	MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	22	1	1	0	0	24	25	7	0	0	0	0	7	7	47	5	4	0	0	56	58
16:15	15	3	0	0	0	18	18	3	1	0	0	0	4	4	29	5	2	1	0	37	39
16:30	27	3	0	0	0	30	30	4	1	0	0	0	5	5	51	3	1	0	1	56	58
16:45	28	3	0	0	0	31	31	0	0	0	0	0	0	0	46	4	0	4	1	55	61
H/TOT	92	10	1	0	0	103	104	14	2	0	0	0	16	16	173	17	7	5	2	204	216
17:00	39	1	0	0	0	40	40	9	0	0	0	0	9	9	91	4	0	1	0	96	97
17:15	29	1	0	0	0	30	30	0	0	0	0	0	0	0	51	5	0	0	0	56	56
17:30	21	0	0	0	0	21	21	4	0	0	0	0	4	4	38	3	0	1	0	42	43
17:45	12	3	0	0	0	15	15	0	0	0	0	0	0	0	39	3	0	0	0	42	42
H/TOT	101	5	0	0	0	106	106	13	0	0	0	0	13	13	219	15	0	2	0	236	239
18:00	18	1	0	0	0	19	19	1	1	0	0	0	2	2	39	2	0	2	0	43	46
18:15	23	2	0	0	0	25	25	2	1	0	0	0	3	3	39	1	0	0	0	40	40
18:30	12	1	0	0	0	13	13	4	0	0	0	0	4	4	26	2	0	0	0	28	28
18:45	8	0	0	0	0	8	8	2	1	0	0	0	3	3	27	2	0	0	0	29	29
H/TOT	61	4	0	0	0	65	65	9	3	0	0	0	12	12	131	7	0	2	0	140	143

P/TOT	254	19	1	0	0	274	275	36	5	0	0	0	41	41	523	39	7	9	2	580	597

PCU's Through Junction
244
297
310
359
1209
378
409
295
327
1409
336
325
273
222
1155
3773

PCU's Through Junction
324
272
350
306
1251
383
347
281
301
1312
310
271
276
269
1125

3688

Appendix B TRICS

Calculation Reference: AUDIT-800401-190226-0237

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : B - SECONDARY
VEHICLES

Selected regions and areas:

12	CONNAUGHT		
	RO	ROSCOMMON	1 days
13	MUNSTER		
	CL	CLARE	1 days
	TI	TIPPERARY	1 days
14	LEINSTER		
	KK	KILKENNY	1 days
	WC	WICKLOW	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	2 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: 265 to 726 (units:)
Range Selected by User: 213 to 726 (units:)

Parking Spaces Range: Selected: 15 to 101 Actual: 15 to 101

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 21/11/17

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

Selected survey days:

Monday	2 days
Tuesday	3 days
Wednesday	1 days
Thursday	1 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	3

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	3
No Sub Category	4

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

Secondary Filtering selection:

Use Class:

D1	7 days

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

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	2 days
20,001 to 25,000	1 days
100,001 or More	1 days

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

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	3 days
25,001 to 50,000	1 days
500,001 or More	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	3 days

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

Travel Plan:

No	7 days

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

PTAL Rating:

No PTAL Present	7 days

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

LIST OF SITES relevant to selection parameters

1 CL-04-B-01 SECONDARY SCHOOL CLARE
HARMONY ROW
ENNIS

Edge of Town Centre
No Sub Category
Total Number of pupils: 380
Survey date: WEDNESDAY 06/11/13 Survey Type: MANUAL

2 DL-04-B-01 SECONDARY SCHOOL DUBLIN
SANDFORD ROAD
DUBLIN
RANELAGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 265
Survey date: TUESDAY 27/09/11 Survey Type: MANUAL

3 DL-04-B-02 SECONDARY SCHOOL DUBLIN
ZION ROAD
DUBLIN
RATHFARNHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 726
Survey date: MONDAY 19/10/15 Survey Type: MANUAL

4 KK-04-B-02 SECONDARY SCHOOL KILKENNY
LADY'S WELL STREET
THOMASTOWN

Edge of Town Centre
No Sub Category
Total Number of pupils: 265
Survey date: THURSDAY 26/10/17 Survey Type: MANUAL

5 RO-04-B-01 SECONDARY SCHOOL ROSCOMMON
ST THERESA'S ROAD
ROSCOMMON

Edge of Town
Residential Zone
Total Number of pupils: 272
Survey date: TUESDAY 23/09/14 Survey Type: MANUAL

6 TI-04-B-01 SECONDARY SCHOOL TIPPERARY
CASTLEMEADOWS
THURLES
GORTATAGGART
Edge of Town
No Sub Category
Total Number of pupils: 400
Survey date: TUESDAY 21/11/17 Survey Type: MANUAL

7 WC-04-B-01 SECONDARY SCHOOL WICKLOW
NEWCASTLE ROAD
KILCOOLE

Edge of Town
No Sub Category
Total Number of pupils: 586
Survey date: MONDAY 18/10/10 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/B - SECONDARY
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	7	413	0.030	7	413	0.009	7	413	0.039
08:00 - 09:00	7	413	0.334	7	413	0.241	7	413	0.575
09:00 - 10:00	7	413	0.052	7	413	0.051	7	413	0.103
10:00 - 11:00	7	413	0.016	7	413	0.013	7	413	0.029
11:00 - 12:00	7	413	0.018	7	413	0.016	7	413	0.034
12:00 - 13:00	7	413	0.014	7	413	0.024	7	413	0.038
13:00 - 14:00	7	413	0.017	7	413	0.024	7	413	0.041
14:00 - 15:00	7	413	0.039	7	413	0.024	7	413	0.063
15:00 - 16:00	7	413	0.178	7	413	0.180	7	413	0.358
16:00 - 17:00	7	413	0.048	7	413	0.124	7	413	0.172
17:00 - 18:00	7	413	0.048	7	413	0.074	7	413	0.122
18:00 - 19:00	7	413	0.019	7	413	0.021	7	413	0.040
19:00 - 20:00	1	586	0.060	1	586	0.007	1	586	0.067
20:00 - 21:00	1	586	0.000	1	586	0.000	1	586	0.000
21:00 - 22:00	1	586	0.005	1	586	0.067	1	586	0.072
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.878			0.875			1.753

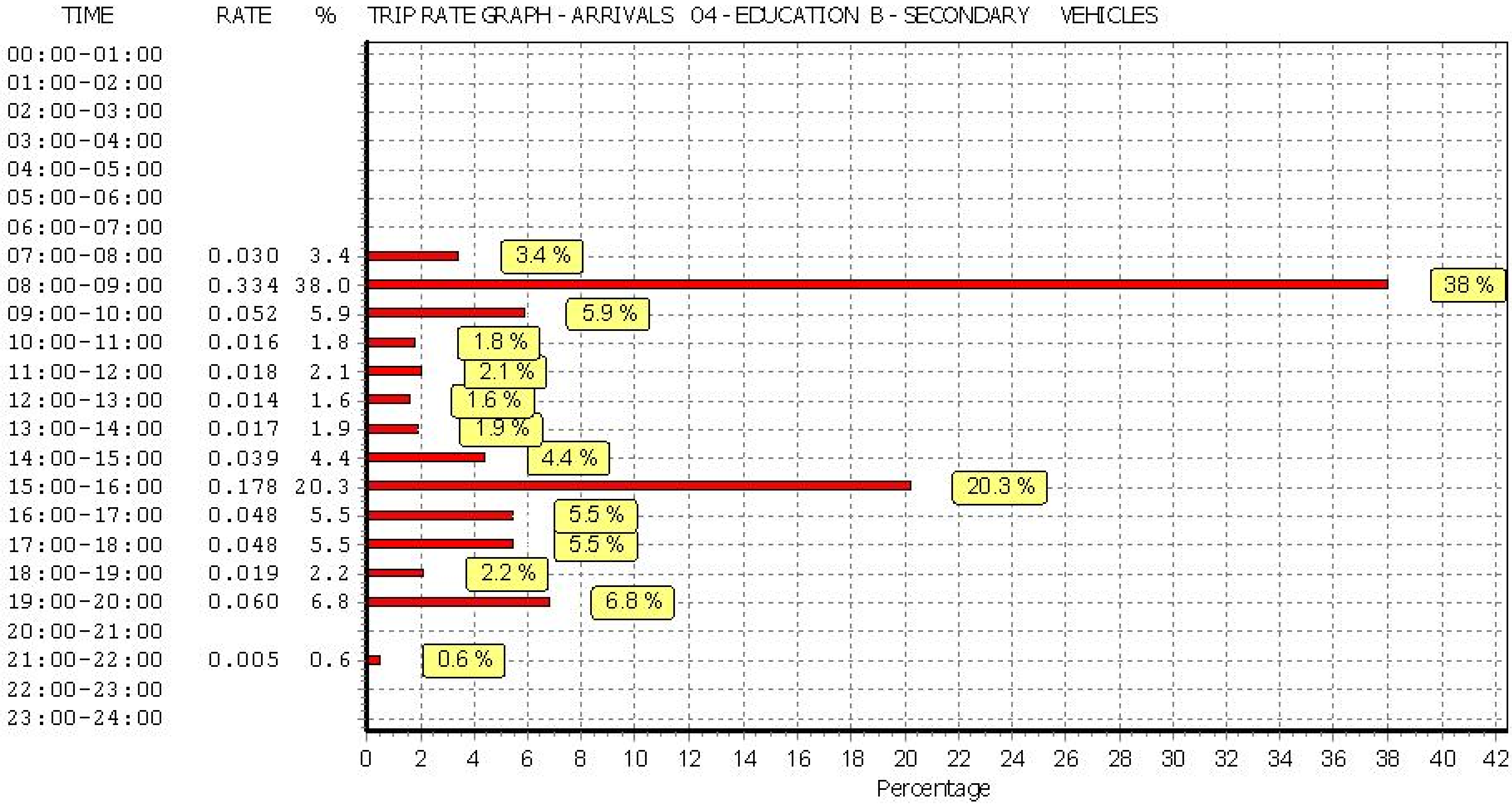
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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

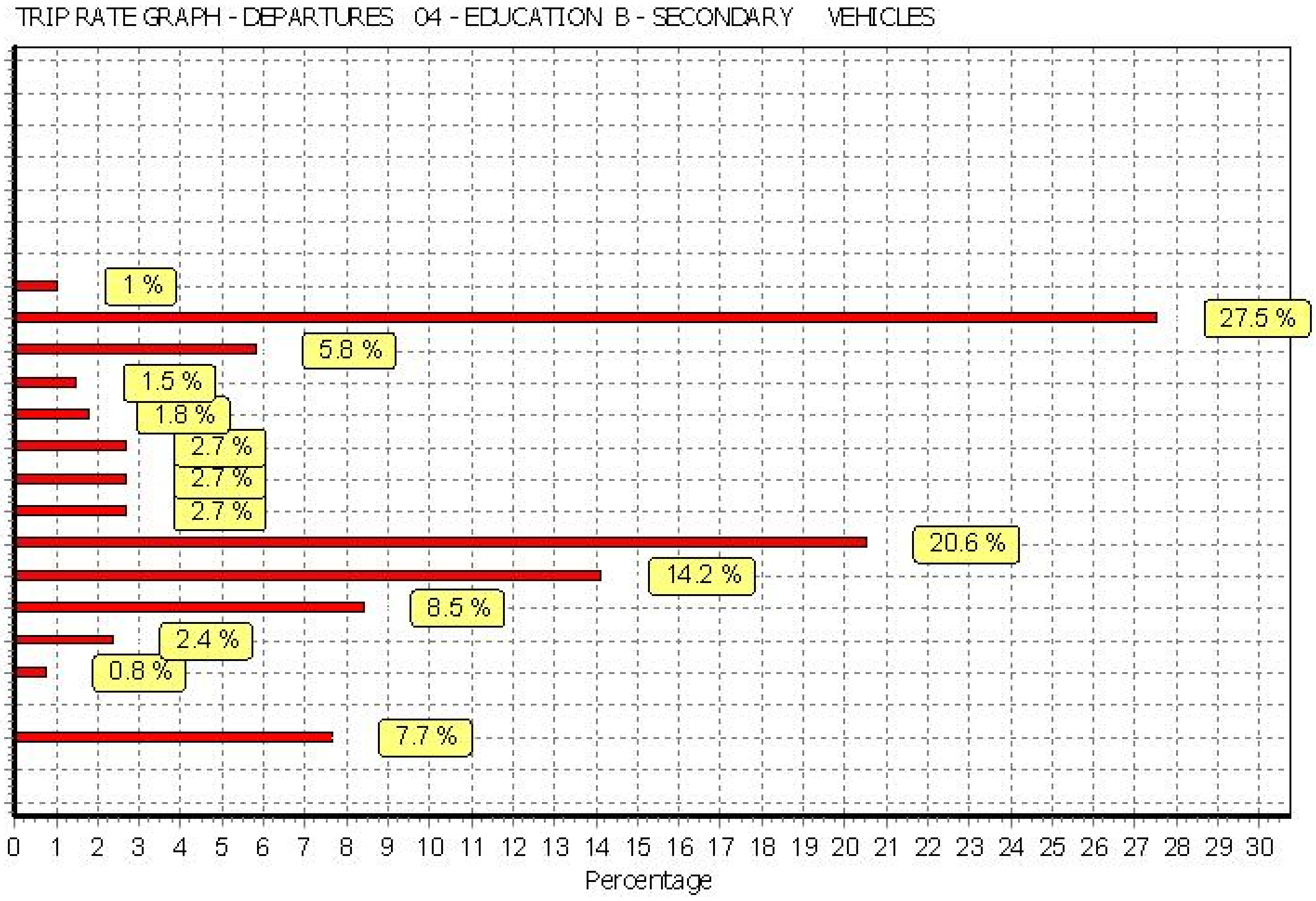
Trip rate parameter range selected:	265 - 726 (units:)
Survey date date range:	01/01/10 - 21/11/17
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TIME	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	0.009	1.0
08:00-09:00	0.241	27.5
09:00-10:00	0.051	5.8
10:00-11:00	0.013	1.5
11:00-12:00	0.016	1.8
12:00-13:00	0.024	2.7
13:00-14:00	0.024	2.7
14:00-15:00	0.024	2.7
15:00-16:00	0.180	20.6
16:00-17:00	0.124	14.2
17:00-18:00	0.074	8.5
18:00-19:00	0.021	2.4
19:00-20:00	0.007	0.8
20:00-21:00		
21:00-22:00	0.067	7.7
22:00-23:00		
23:00-24:00		



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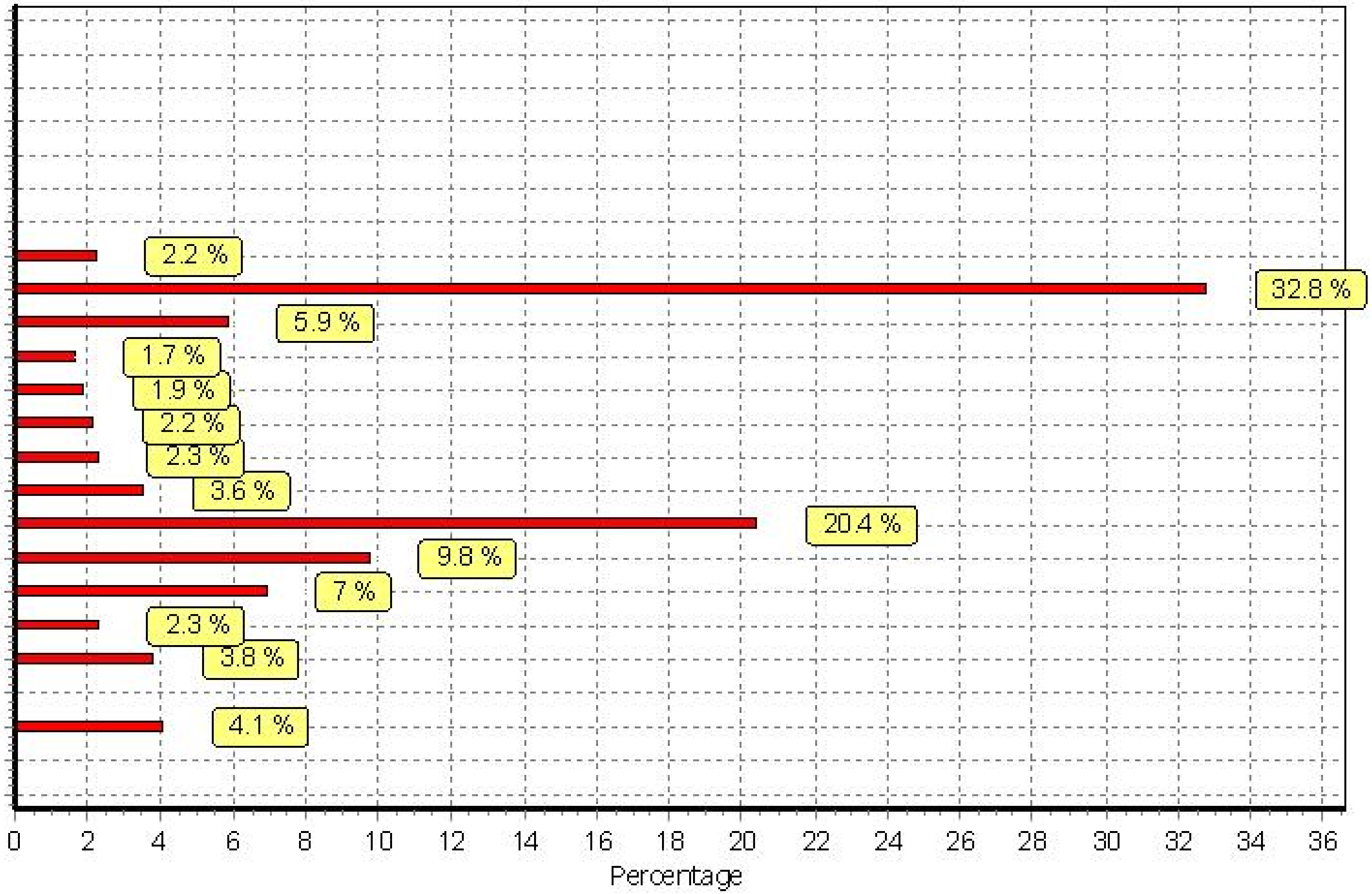
TIME	RATE	%
00:00-01:00		
01:00-02:00		
02:00-03:00		
03:00-04:00		
04:00-05:00		
05:00-06:00		
06:00-07:00		
07:00-08:00	0.039	2.2
08:00-09:00	0.575	32.8
09:00-10:00	0.103	5.9
10:00-11:00	0.029	1.7
11:00-12:00	0.034	1.9
12:00-13:00	0.038	2.2
13:00-14:00	0.041	2.3
14:00-15:00	0.063	3.6
15:00-16:00	0.358	20.4
16:00-17:00	0.172	9.8
17:00-18:00	0.122	7.0
18:00-19:00	0.040	2.3
19:00-20:00	0.067	3.8
20:00-21:00		
21:00-22:00	0.072	4.1
22:00-23:00		
23:00-24:00		



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TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY
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	7	413	0.000	7	413	0.000	7	413	0.000
08:00 - 09:00	7	**413**	**0.002**	7	413	0.001	7	413	0.003
09:00 - 10:00	7	413	0.001	7	413	0.001	7	413	0.002
10:00 - 11:00	7	413	0.000	7	413	0.000	7	413	0.000
11:00 - 12:00	7	413	0.000	7	413	0.000	7	413	0.000
12:00 - 13:00	7	413	0.000	7	413	0.000	7	413	0.000
13:00 - 14:00	7	413	0.000	7	413	0.000	7	413	0.000
14:00 - 15:00	7	413	0.000	7	413	0.000	7	413	0.000
15:00 - 16:00	7	413	0.002	7	**413**	**0.002**	7	**413**	**0.004**
16:00 - 17:00	7	413	0.001	7	413	0.001	7	413	0.002
17:00 - 18:00	7	413	0.000	7	413	0.000	7	413	0.000
18:00 - 19:00	7	413	0.000	7	413	0.000	7	413	0.000
19:00 - 20:00	1	586	0.000	1	586	0.000	1	586	0.000
20:00 - 21:00	1	586	0.000	1	586	0.000	1	586	0.000
21:00 - 22:00	1	586	0.000	1	586	0.000	1	586	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.006			0.005			0.011

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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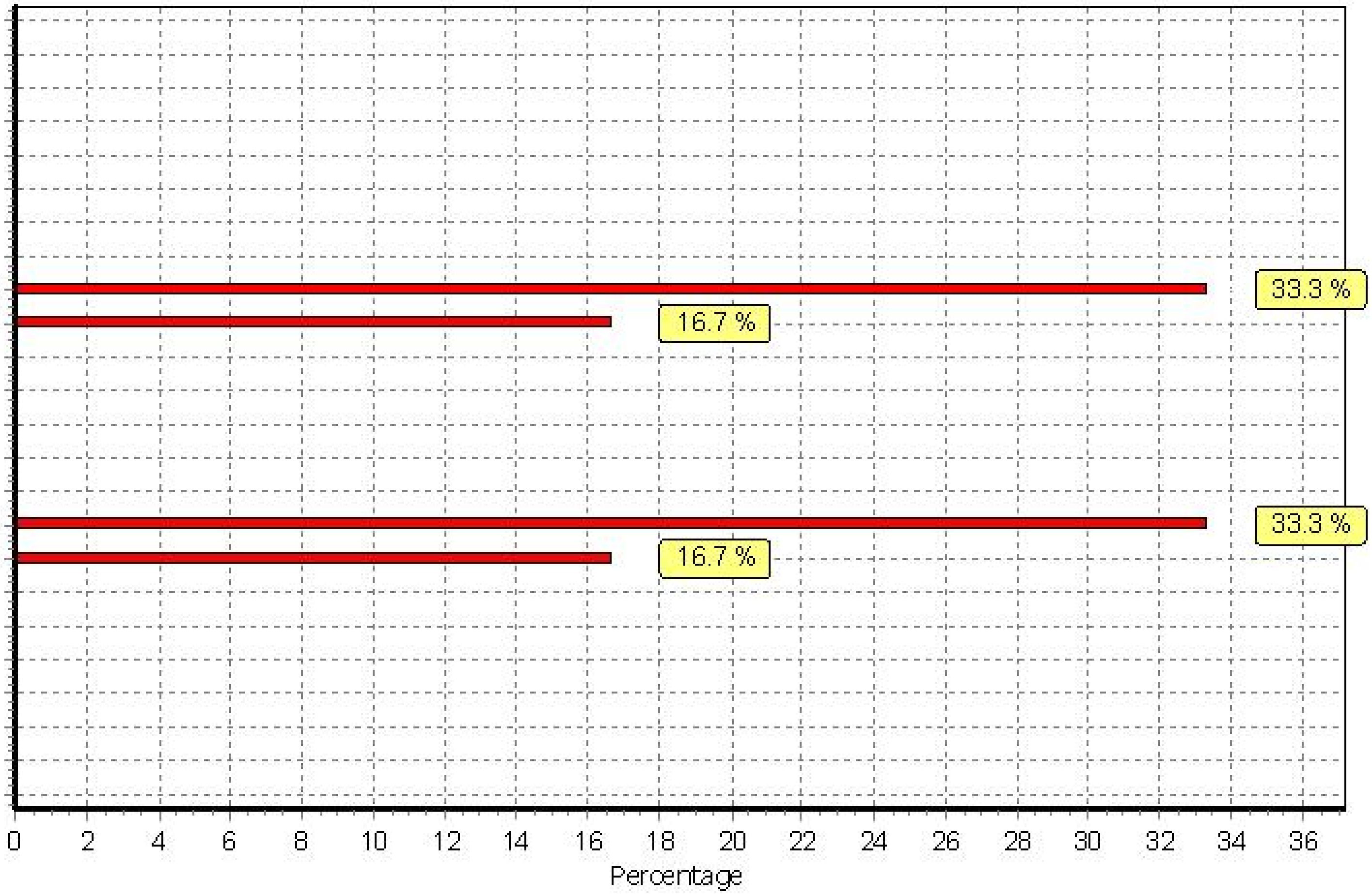
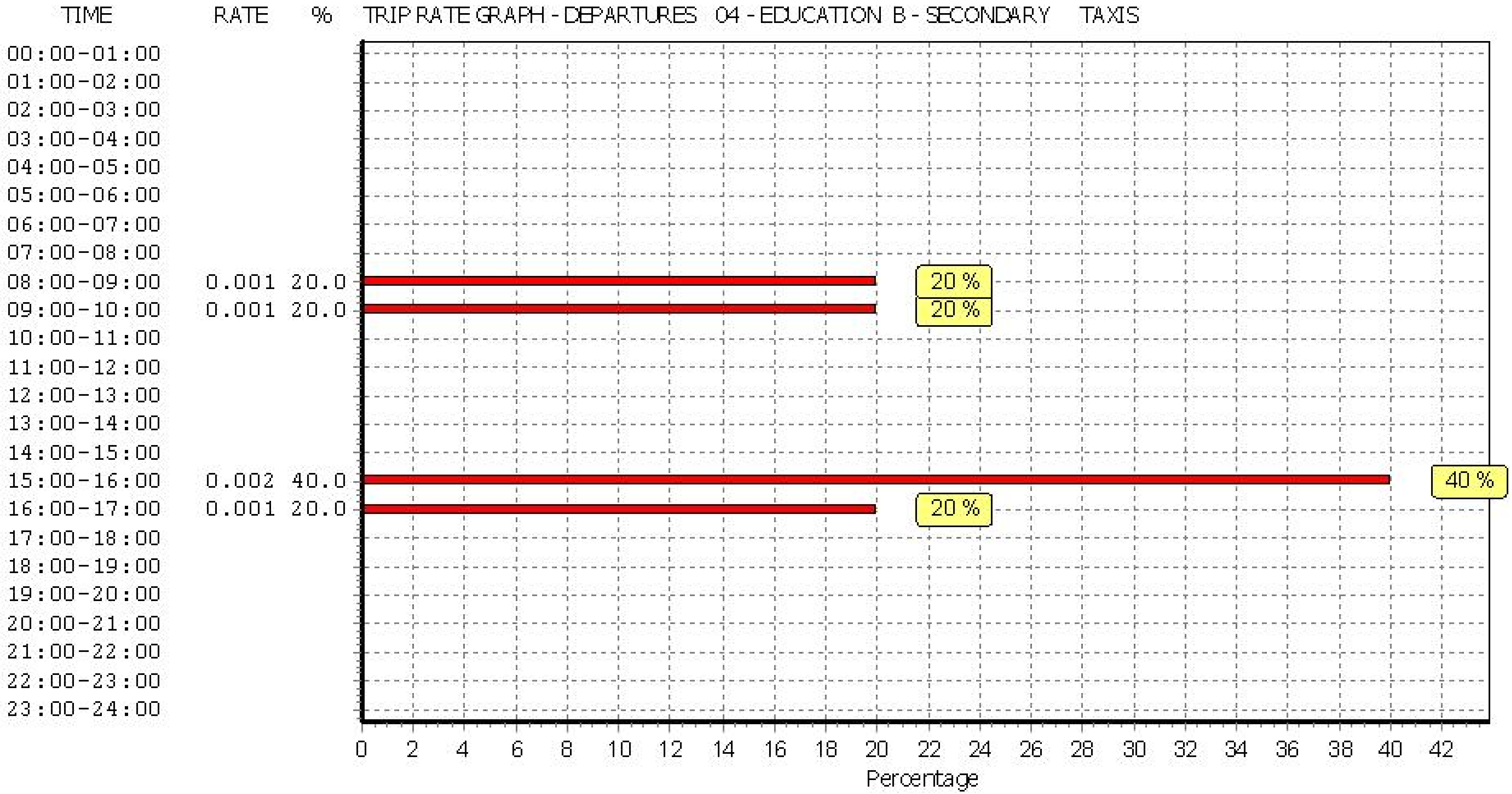
TRIP RATE GRAPH - ARRIVALS 04 - EDUCATION B - SECONDARY TAXIS

TIME	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		
08:00-09:00	0.002	33.3
09:00-10:00	0.001	16.7
10:00-11:00		
11:00-12:00		
12:00-13:00		
13:00-14:00		
14:00-15:00		
15:00-16:00	0.002	33.3
16:00-17:00	0.001	16.7
17:00-18:00		
18:00-19:00		
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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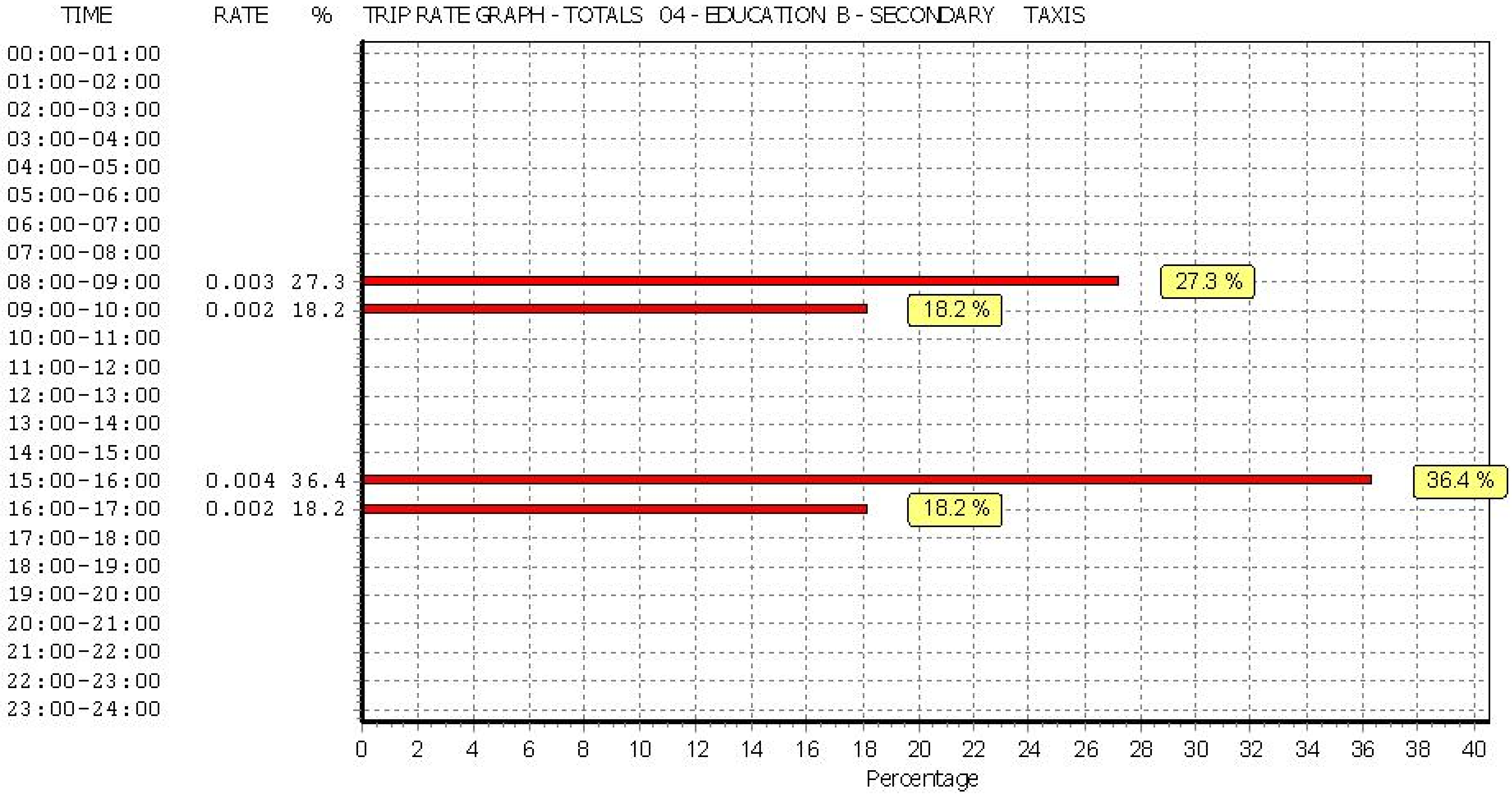

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TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY
OGVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	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	7	413	0.000	7	413	0.000	7	413	0.000
08:00 - 09:00	7	**413**	**0.001**	7	**413**	**0.001**	7	**413**	**0.002**
09:00 - 10:00	7	413	0.001	7	413	0.001	7	413	0.002
10:00 - 11:00	7	413	0.000	7	413	0.001	7	413	0.001
11:00 - 12:00	7	413	0.001	7	413	0.001	7	413	0.002
12:00 - 13:00	7	413	0.000	7	413	0.000	7	413	0.000
13:00 - 14:00	7	413	0.000	7	413	0.000	7	413	0.000
14:00 - 15:00	7	413	0.000	7	413	0.000	7	413	0.000
15:00 - 16:00	7	413	0.000	7	413	0.000	7	413	0.000
16:00 - 17:00	7	413	0.000	7	413	0.000	7	413	0.000
17:00 - 18:00	7	413	0.000	7	413	0.000	7	413	0.000
18:00 - 19:00	7	413	0.000	7	413	0.000	7	413	0.000
19:00 - 20:00	1	586	0.000	1	586	0.000	1	586	0.000
20:00 - 21:00	1	586	0.000	1	586	0.000	1	586	0.000
21:00 - 22:00	1	586	0.000	1	586	0.000	1	586	0.000
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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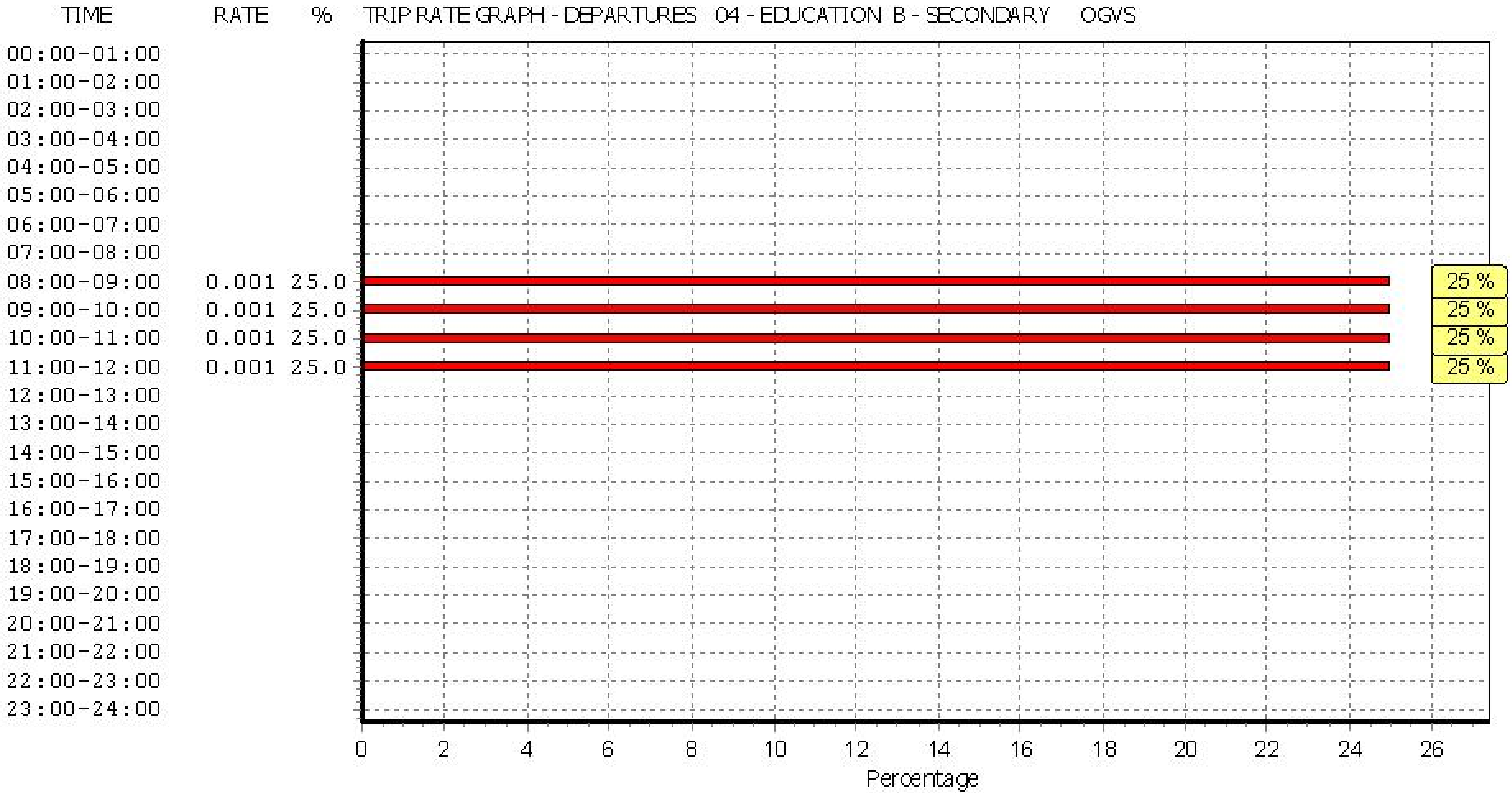
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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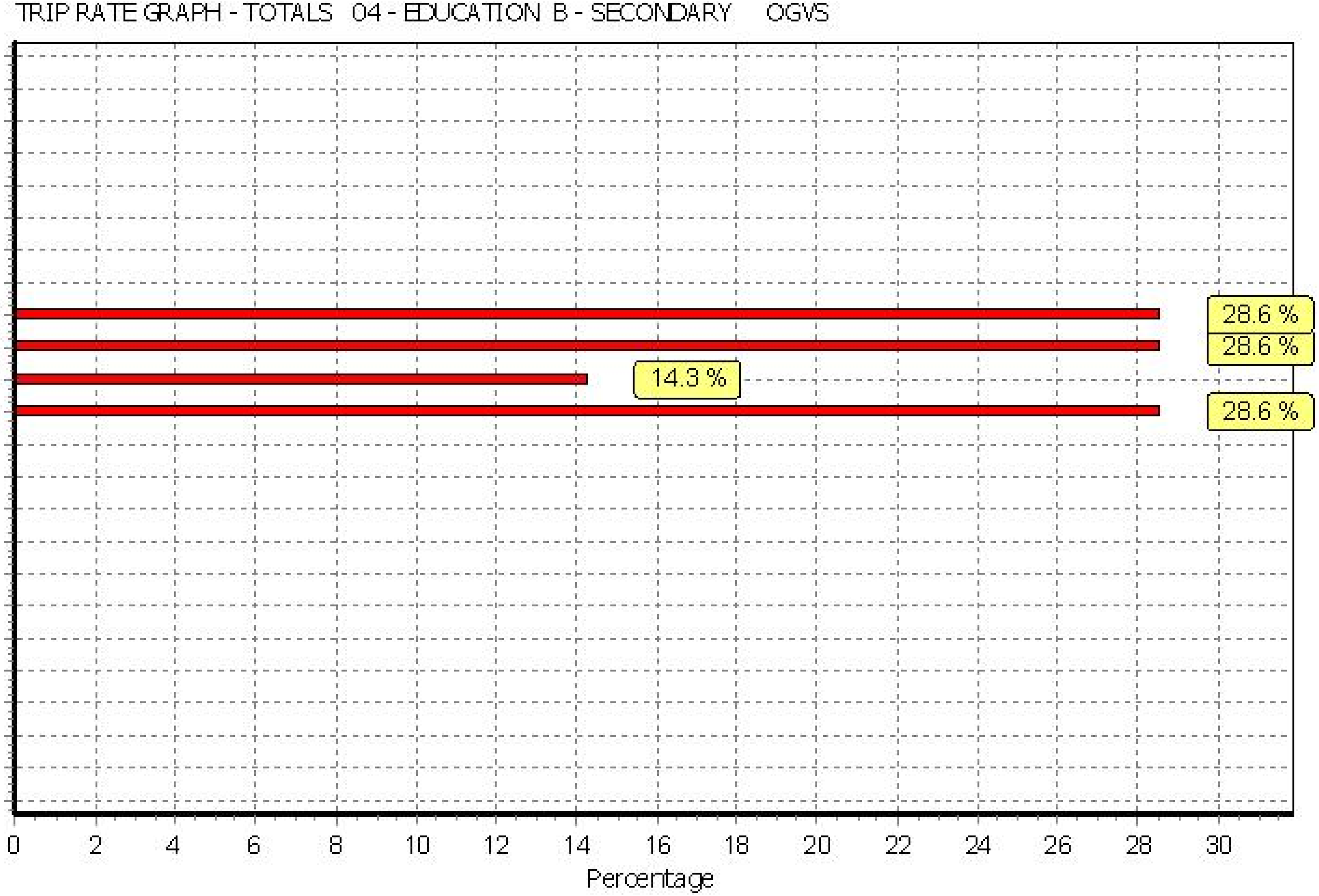
TIME	RATE	%
00:00-01:00		
01:00-02:00		
02:00-03:00		
03:00-04:00		
04:00-05:00		
05:00-06:00		
06:00-07:00		
07:00-08:00		
08:00-09:00	0.002	28.6
09:00-10:00	0.002	28.6
10:00-11:00	0.001	14.3
11:00-12:00	0.002	28.6
12:00-13:00		
13:00-14:00		
14:00-15:00		
15:00-16:00		
16:00-17:00		
17:00-18:00		
18:00-19:00		
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



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TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY
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	7	413	0.000	7	413	0.000	7	413	0.000
08:00 - 09:00	7	413	0.004	7	413	0.004	7	413	0.008
09:00 - 10:00	7	413	0.000	7	413	0.001	7	413	0.001
10:00 - 11:00	7	413	0.000	7	413	0.000	7	413	0.000
11:00 - 12:00	7	413	0.000	7	413	0.000	7	413	0.000
12:00 - 13:00	7	413	0.000	7	413	0.000	7	413	0.000
13:00 - 14:00	7	413	0.000	7	413	0.000	7	413	0.000
14:00 - 15:00	7	413	0.000	7	413	0.000	7	413	0.000
15:00 - 16:00	7	413	0.002	7	413	0.002	7	413	0.004
16:00 - 17:00	7	413	0.000	7	413	0.000	7	413	0.000
17:00 - 18:00	7	413	0.000	7	413	0.000	7	413	0.000
18:00 - 19:00	7	413	0.000	7	413	0.000	7	413	0.000
19:00 - 20:00	1	586	0.000	1	586	0.000	1	586	0.000
20:00 - 21:00	1	586	0.000	1	586	0.000	1	586	0.000
21:00 - 22:00	1	586	0.000	1	586	0.000	1	586	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.006			0.007			0.013

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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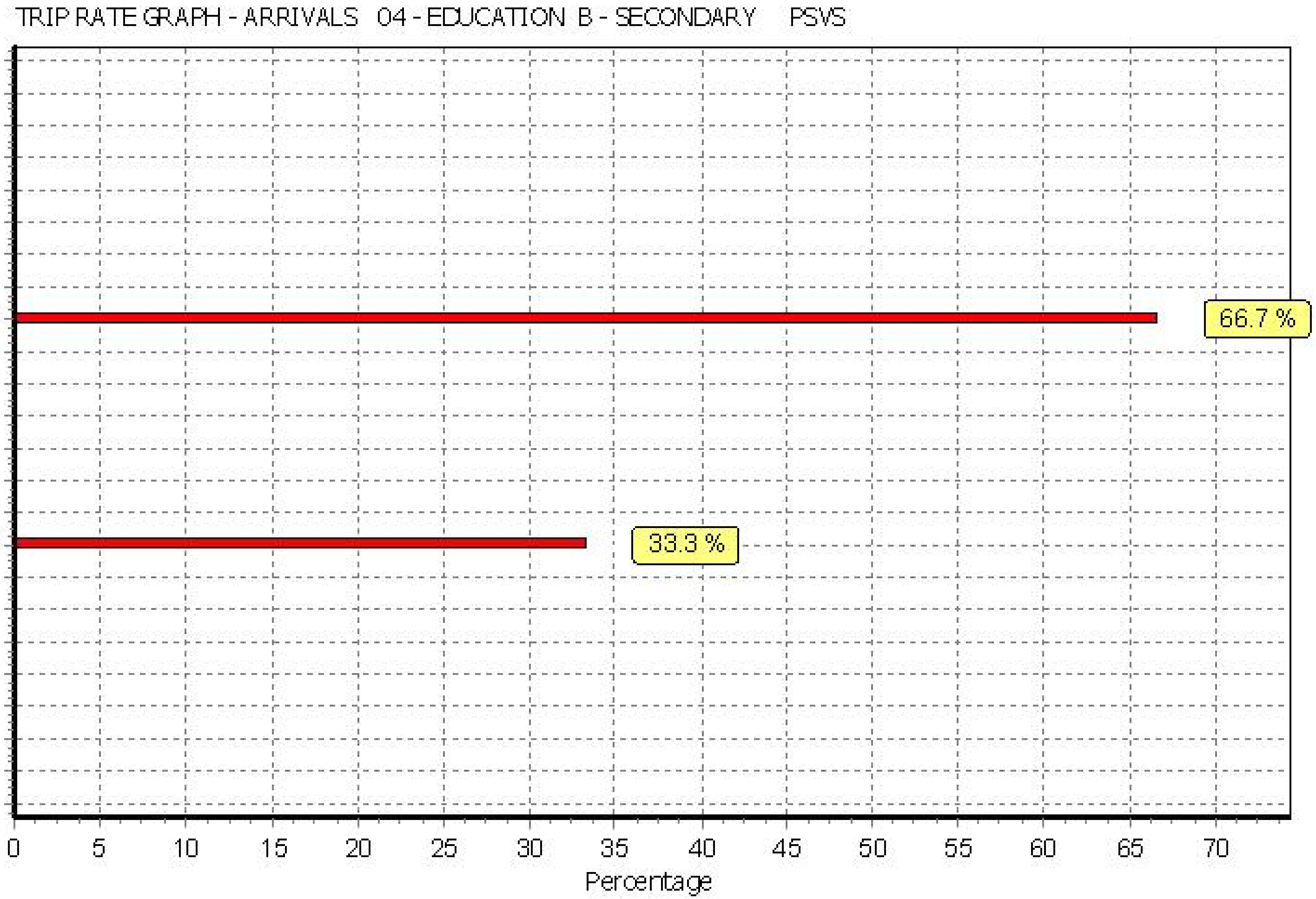
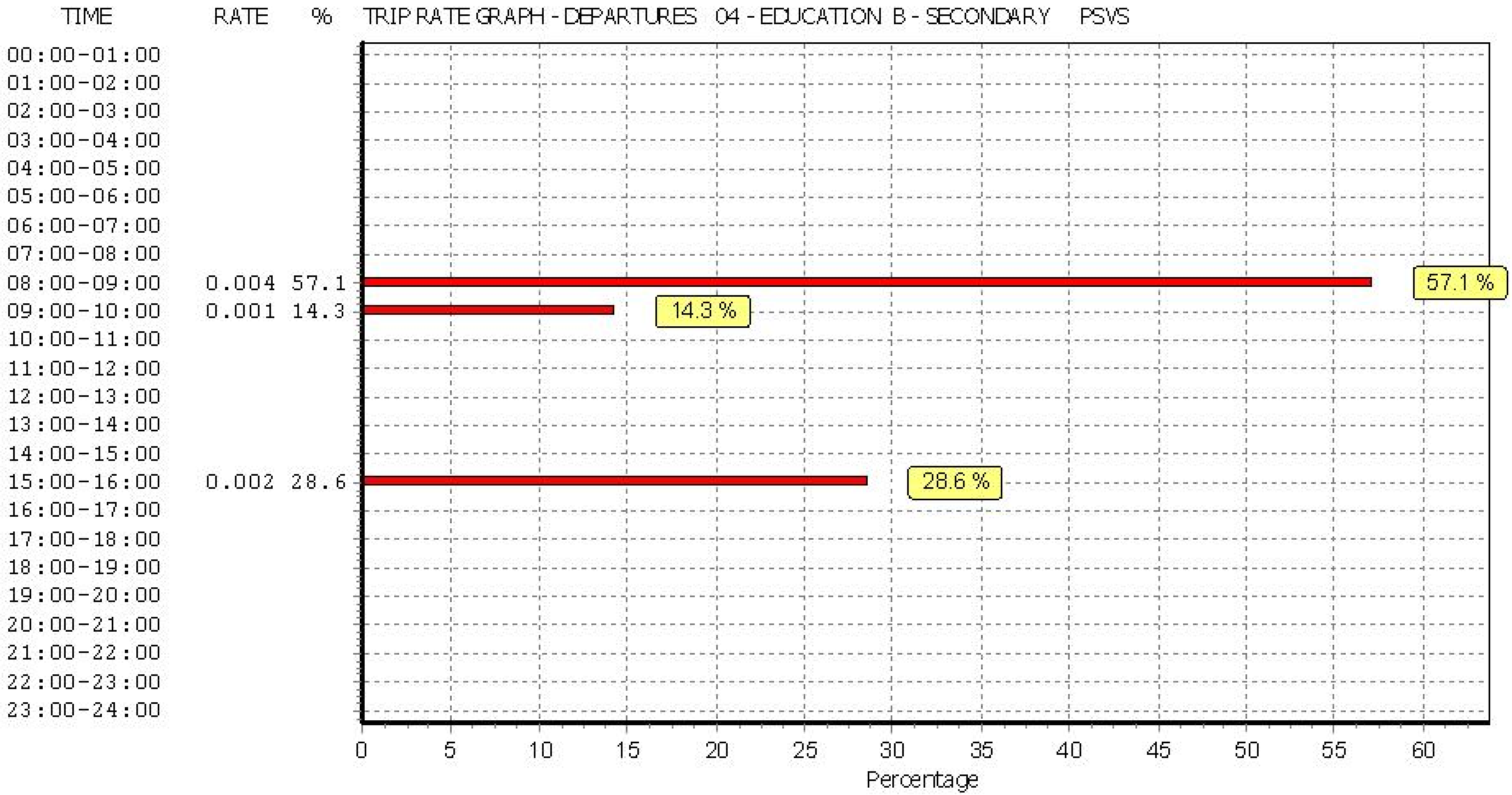
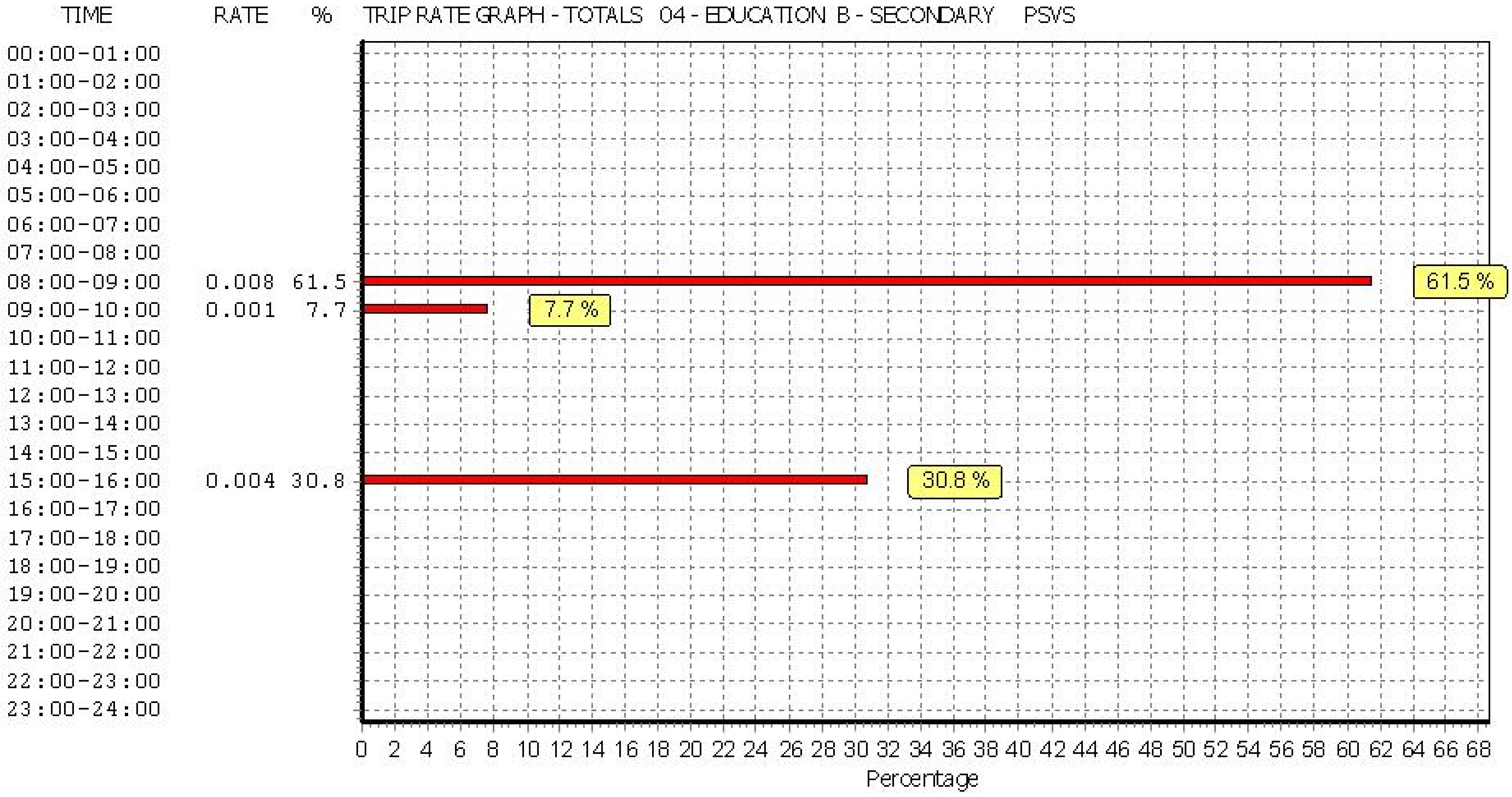
TIME	RATE	%
00:00-01:00		
01:00-02:00		
02:00-03:00		
03:00-04:00		
04:00-05:00		
05:00-06:00		
06:00-07:00		
07:00-08:00		
08:00-09:00	0.004	66.7
09:00-10:00		
10:00-11:00		
11:00-12:00		
12:00-13:00		
13:00-14:00		
14:00-15:00		
15:00-16:00	0.002	33.3
16:00-17:00		
17:00-18:00		
18:00-19:00		
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY
CYCLISTS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

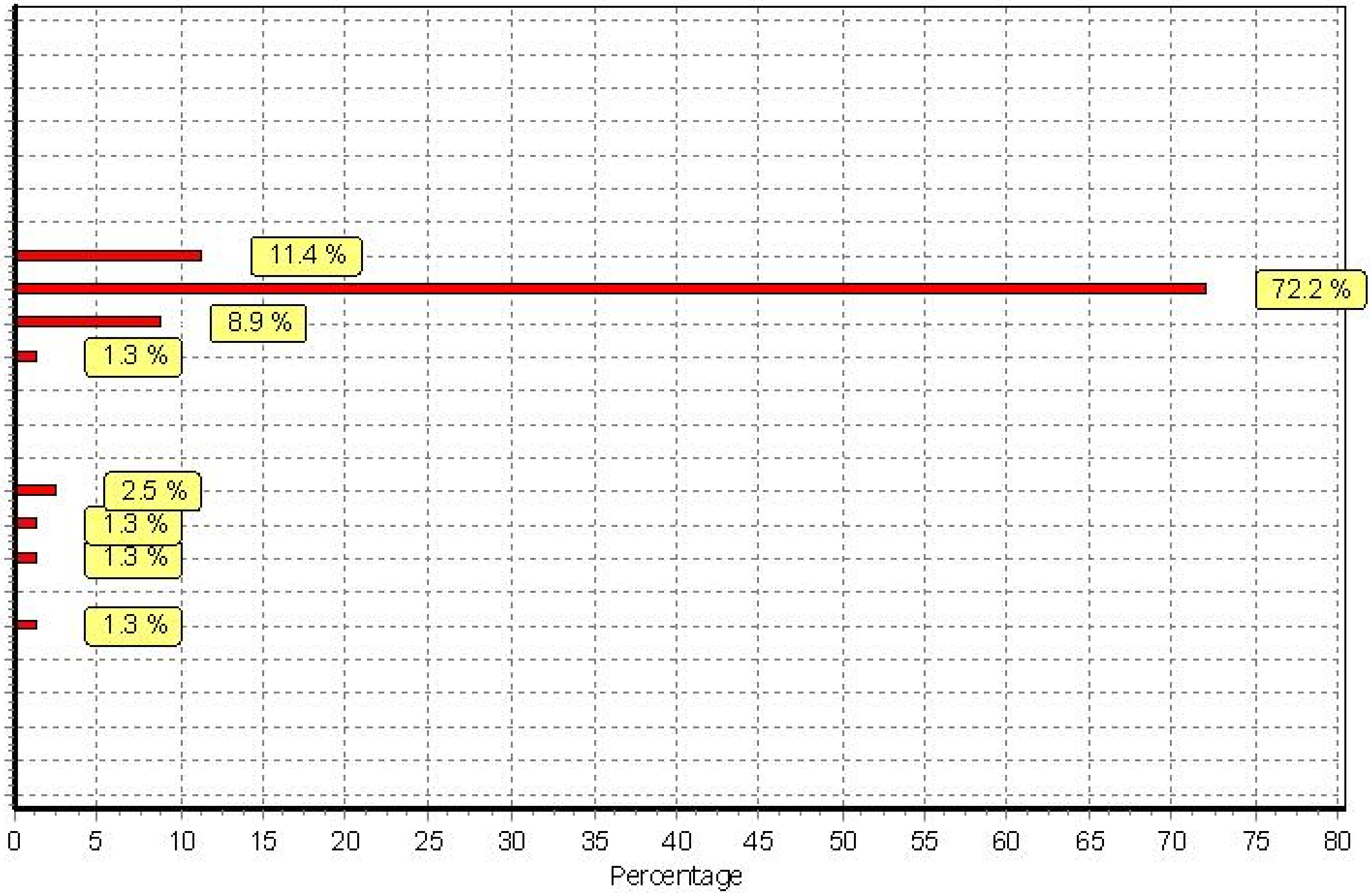
	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	413	0.009	7	413	0.001	7	413	0.010
08:00 - 09:00	7	**413**	**0.057**	7	413	0.002	7	**413**	**0.059**
09:00 - 10:00	7	413	0.007	7	413	0.002	7	413	0.009
10:00 - 11:00	7	413	0.001	7	413	0.000	7	413	0.001
11:00 - 12:00	7	413	0.000	7	413	0.001	7	413	0.001
12:00 - 13:00	7	413	0.000	7	413	0.001	7	413	0.001
13:00 - 14:00	7	413	0.000	7	413	0.001	7	413	0.001
14:00 - 15:00	7	413	0.002	7	413	0.003	7	413	0.005
15:00 - 16:00	7	413	0.001	7	413	0.021	7	413	0.022
16:00 - 17:00	7	413	0.001	7	**413**	**0.029**	7	413	0.030
17:00 - 18:00	7	413	0.000	7	413	0.013	7	413	0.013
18:00 - 19:00	7	413	0.001	7	413	0.005	7	413	0.006
19:00 - 20:00	1	586	0.000	1	586	0.000	1	586	0.000
20:00 - 21:00	1	586	0.000	1	586	0.000	1	586	0.000
21:00 - 22:00	1	586	0.000	1	586	0.000	1	586	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.079			0.079			0.158

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.

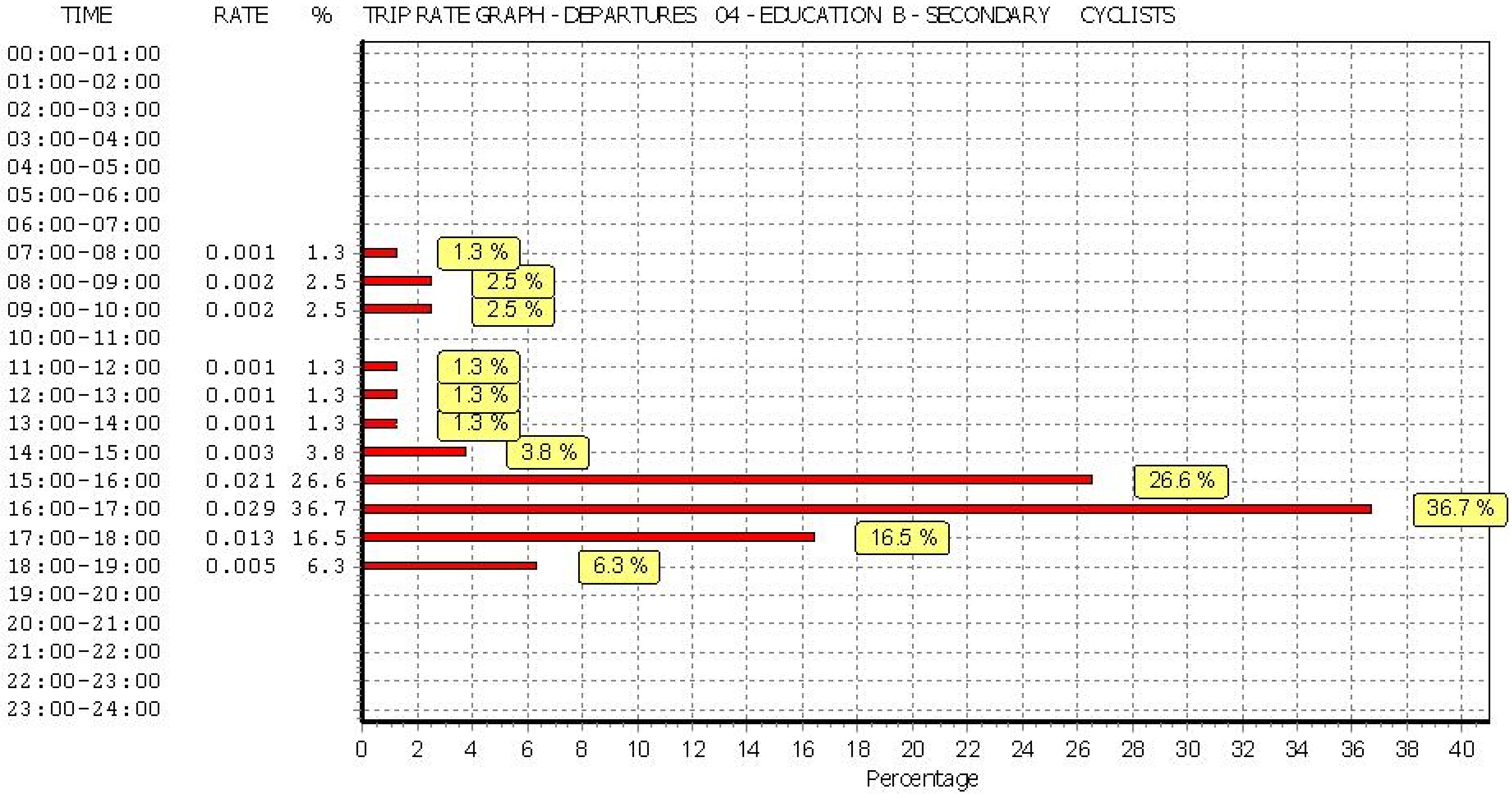
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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 GRAPH - ARRIVALS 04 - EDUCATION B - SECONDARY CYCLISTS

TIME	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	0.009	11.4
08:00-09:00	0.057	72.2
09:00-10:00	0.007	8.9
10:00-11:00	0.001	1.3
11:00-12:00		
12:00-13:00		
13:00-14:00		
14:00-15:00	0.002	2.5
15:00-16:00	0.001	1.3
16:00-17:00	0.001	1.3
17:00-18:00		
18:00-19:00	0.001	1.3
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		

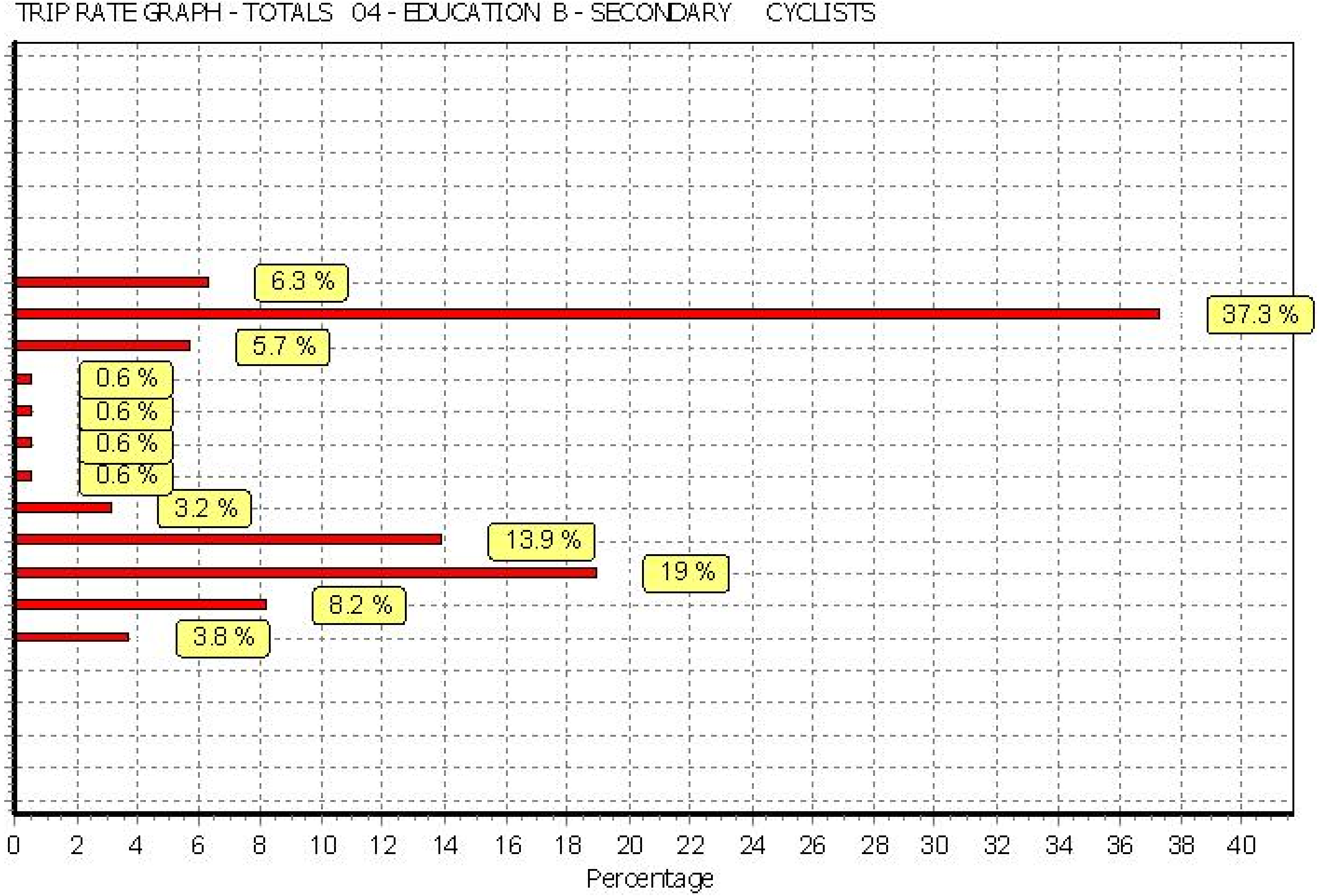


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TIME	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	0.010	6.3
08:00-09:00	0.059	37.3
09:00-10:00	0.009	5.7
10:00-11:00	0.001	0.6
11:00-12:00	0.001	0.6
12:00-13:00	0.001	0.6
13:00-14:00	0.001	0.6
14:00-15:00	0.005	3.2
15:00-16:00	0.022	13.9
16:00-17:00	0.030	19.0
17:00-18:00	0.013	8.2
18:00-19:00	0.006	3.8
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Calculation Reference: AUDIT-800401-200410-0429

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

14	LEINSTER		
	CC	CARLOW	1 days
	WC	WICKLOW	2 days
	WX	WEXFORD	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	2 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 8 to 65 (units:)
Range Selected by User: 8 to 437 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 20/06/18

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
Wednesday	2 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	6 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 Centre	1
Suburban Area (PPS6 Out of Centre)	1
Edge of Town	3
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Residential Zone	3
No Sub Category	3

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	6 days

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

Population within 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	3 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	3 days

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

Travel Plan:

No	6 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	6 days

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

LIST OF SITES relevant to selection parameters

1 CC-03-A-01 DETACHED HOUSES CARLOW
R417 ANTHY ROAD
CARLOW

Edge of Town
Residential Zone
Total No of Dwellings: 23
Survey date: WEDNESDAY 25/05/16 Survey Type: MANUAL

2 DL-03-A-09 TERRACED DUBLIN
RATHFARNHAM ROAD
DUBLIN
RATHFARNHAM
Neighbourhood Centre (PPS6 Local Centre)
No Sub Category
Total No of Dwellings: 8
Survey date: FRIDAY 07/09/12 Survey Type: MANUAL

3 DL-03-A-10 SEMI DETACHED & DETACHED DUBLIN
R124
MALAHIDE
SAINT HELENS
Edge of Town
Residential Zone
Total No of Dwellings: 65
Survey date: WEDNESDAY 20/06/18 Survey Type: MANUAL

4 WC-03-A-01 DETACHED HOUSES WICKLOW
STATION ROAD
WICKLOW
CORPORATION MURRAGH
Edge of Town
No Sub Category
Total No of Dwellings: 50
Survey date: MONDAY 28/05/18 Survey Type: MANUAL

5 WC-03-A-02 DETACHED HOUSES WICKLOW
MARLTON ROAD
WICKLOW
FRIARSHILL
Edge of Town Centre
Residential Zone
Total No of Dwellings: 45
Survey date: MONDAY 28/05/18 Survey Type: MANUAL

6 WX-03-A-01 SEMI-DETACHED WEXFORD
CLONARD ROAD
WEXFORD

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 34
Survey date: THURSDAY 25/09/14 Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
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	6	38	0.089	6	38	0.240	6	38	0.329
08:00 - 09:00	6	38	0.204	6	38	**0.591**	6	38	**0.795**
09:00 - 10:00	6	38	0.249	6	38	0.253	6	38	0.502
10:00 - 11:00	6	38	0.209	6	38	0.244	6	38	0.453
11:00 - 12:00	6	38	0.191	6	38	0.244	6	38	0.435
12:00 - 13:00	6	38	0.316	6	38	0.213	6	38	0.529
13:00 - 14:00	6	38	0.236	6	38	0.258	6	38	0.494
14:00 - 15:00	6	38	0.342	6	38	0.324	6	38	0.666
15:00 - 16:00	6	38	0.347	6	38	0.338	6	38	0.685
16:00 - 17:00	6	38	0.351	6	38	0.267	6	38	0.618
17:00 - 18:00	6	38	**0.476**	6	38	0.249	6	38	0.725
18:00 - 19:00	6	38	0.396	6	38	0.311	6	38	0.707
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.406			3.532			6.938

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:	8 - 65 (units:)
Survey date date range:	01/01/12 - 20/06/18
Number of weekdays (Monday-Friday):	6
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.

Calculation Reference: AUDIT-800401-200410-0404

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
VEHICLES

Selected regions and areas:

14	LEINSTER		
	LU	LOUTH	3 days
15	GREATER DUBLIN		
	DL	DUBLIN	6 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 20 to 140 (units:)
Range Selected by User: 18 to 372 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 22/11/16

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	5 days
Wednesday	1 days
Thursday	1 days

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

Selected survey types:

Manual count	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 Centre	3
Suburban Area (PPS6 Out of Centre)	4
Neighbourhood Centre (PPS6 Local Centre)	2

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

Selected Location Sub Categories:

Residential Zone	8
Built-Up Zone	1

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

Secondary Filtering selection:

Use Class:

C3	9 days

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

Population within 1 mile:

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

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

Population within 5 miles:

25,001 to 50,000	3 days
250,001 to 500,000	1 days
500,001 or More	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	7 days

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

Travel Plan:

No	9 days

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

PTAL Rating:

No PTAL Present	9 days

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

<u>*LIST OF SITES relevant to selection parameters*</u>

1 DL-03-C-11 BLOCK OF FLATS DUBLIN
WYCKHAM WAY
DUBLIN
DUNDRUM
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 96
Survey date: TUESDAY 10/09/13 Survey Type: MANUAL

2 DL-03-C-12 BLOCK OF FLATS DUBLIN
BOOTERSTOWN AVENUE
DUBLIN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 47
Survey date: TUESDAY 10/09/13 Survey Type: MANUAL

3 DL-03-C-13 BLOCK OF FLATS DUBLIN
SANDYFORD ROAD
DUBLIN

Neighbourhood Centre (PPS6 Local Centre)
Built-Up Zone
Total No of Dwellings: 52
Survey date: TUESDAY 10/09/13 Survey Type: MANUAL

4 DL-03-C-14 BLOCKS OF FLATS DUBLIN
BALLINTEER ROAD
DUBLIN
DUNDRUM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 140
Survey date: TUESDAY 10/09/13 Survey Type: MANUAL

5 DL-03-C-15 BLOCKS OF FLATS DUBLIN
MONKSTOWN ROAD
DUBLIN
MONKSTOWN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 20
Survey date: WEDNESDAY 01/10/14 Survey Type: MANUAL

6 DL-03-C-16 BLOCKS OF FLATS DUBLIN
BOTANIC AVENUE
DUBLIN
DRUMCONDRA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 31
Survey date: TUESDAY 22/11/16 Survey Type: MANUAL

7 LU-03-C-01 BLOCKS OF FLATS LOUTH
DONORE ROAD
DROGHEDA

Edge of Town Centre
Residential Zone
Total No of Dwellings: 52
Survey date: THURSDAY 12/09/13 Survey Type: MANUAL

8 LU-03-C-02 BLOCK OF FLATS LOUTH
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total No of Dwellings: 33
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

9 LU-03-C-03 BLOCK OF FLATS LOUTH
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total No of Dwellings: 20
Survey date: MONDAY 16/09/13 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/C - FLATS PRIVATELY OWNED
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	9	55	0.053	9	55	**0.248**	9	55	0.301
08:00 - 09:00	9	55	0.061	9	55	0.248	9	55	0.309
09:00 - 10:00	9	55	0.053	9	55	0.096	9	55	0.149
10:00 - 11:00	9	55	0.022	9	55	0.069	9	55	0.091
11:00 - 12:00	9	55	0.035	9	55	0.051	9	55	0.086
12:00 - 13:00	9	55	0.061	9	55	0.086	9	55	0.147
13:00 - 14:00	9	55	0.075	9	55	0.053	9	55	0.128
14:00 - 15:00	9	55	0.096	9	55	0.053	9	55	0.149
15:00 - 16:00	9	55	0.088	9	55	0.049	9	55	0.137
16:00 - 17:00	9	55	0.094	9	55	0.057	9	55	0.151
17:00 - 18:00	9	55	0.185	9	55	0.055	9	55	0.240
18:00 - 19:00	9	55	**0.230**	9	55	0.084	9	55	**0.314**
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.053			1.149			2.202

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.

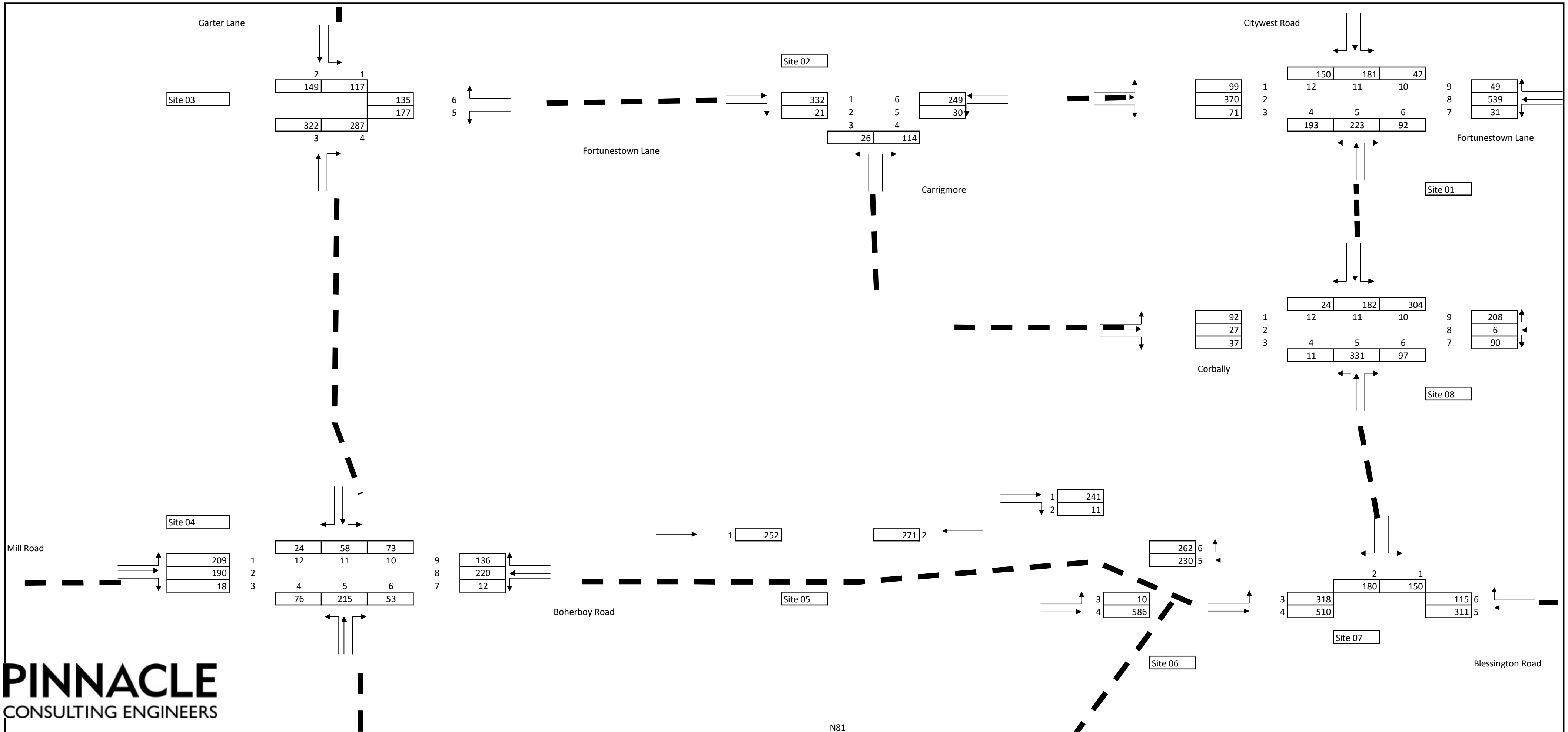
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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

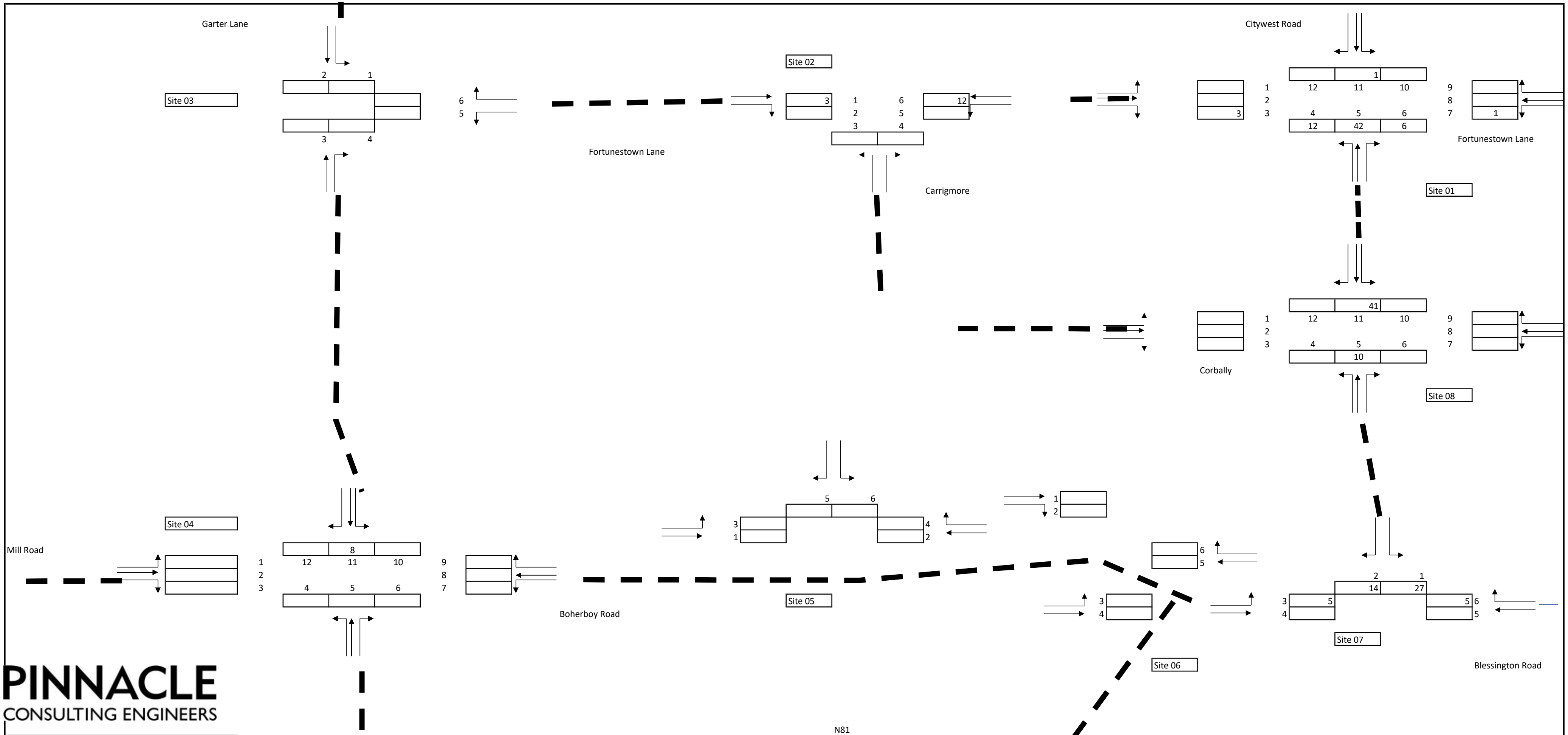
Trip rate parameter range selected:	20 - 140 (units:)
Survey date date range:	01/01/12 - 22/11/16
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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.

Appendix C Flow Diagrams

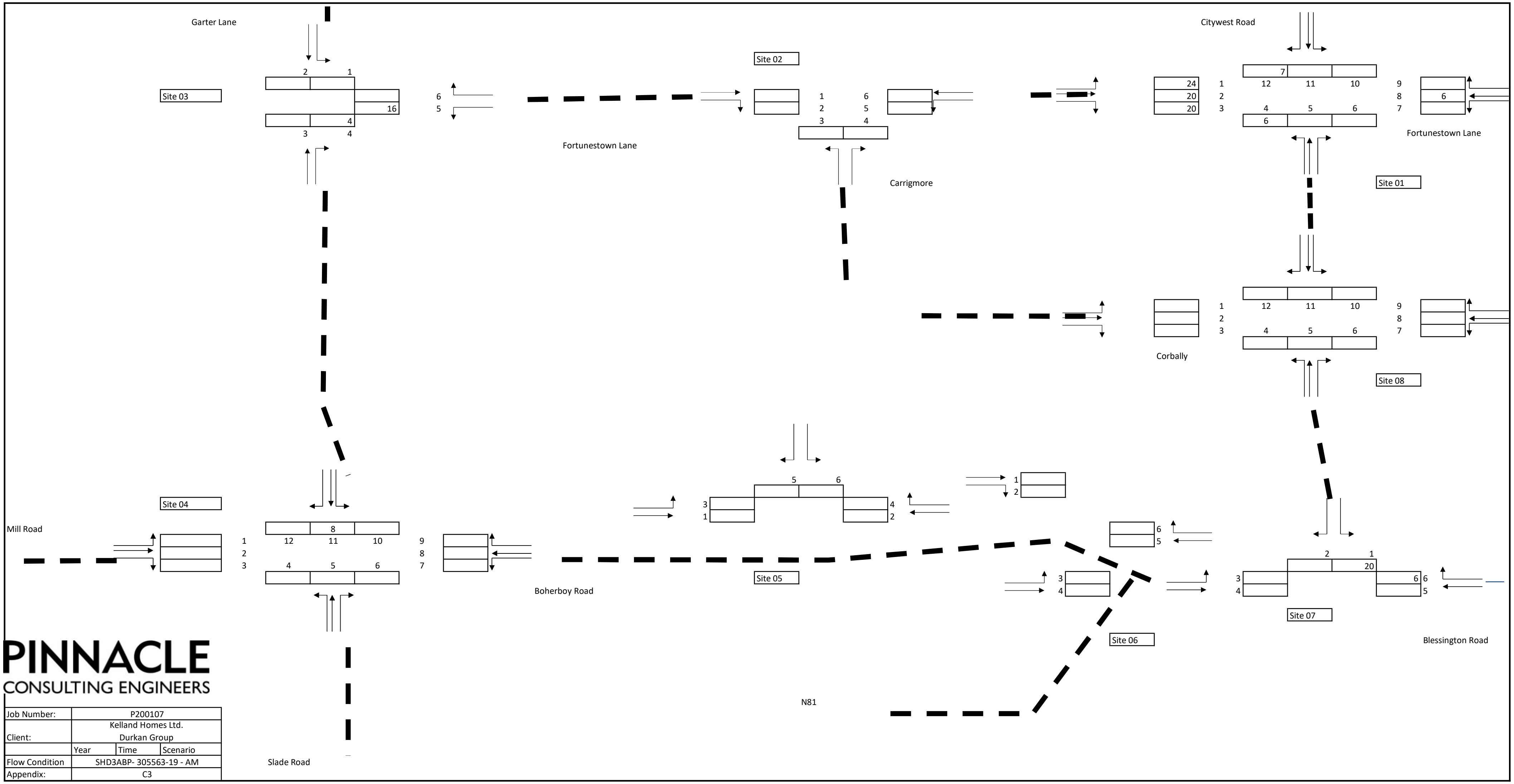


Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2020	AM	Survey
Appendix:	C1		



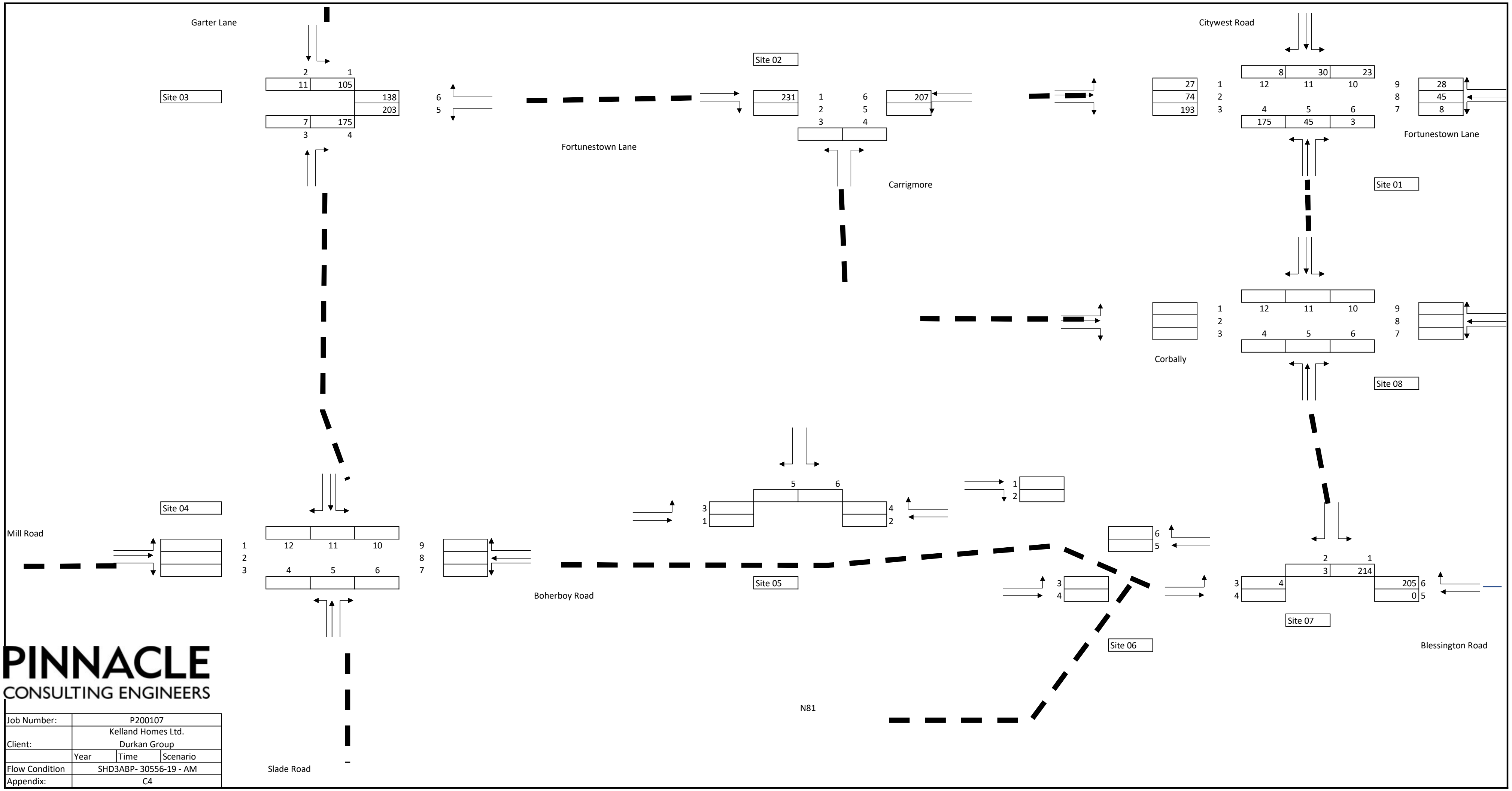
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3AP-306602-20 - AM		
Appendix:	C2		



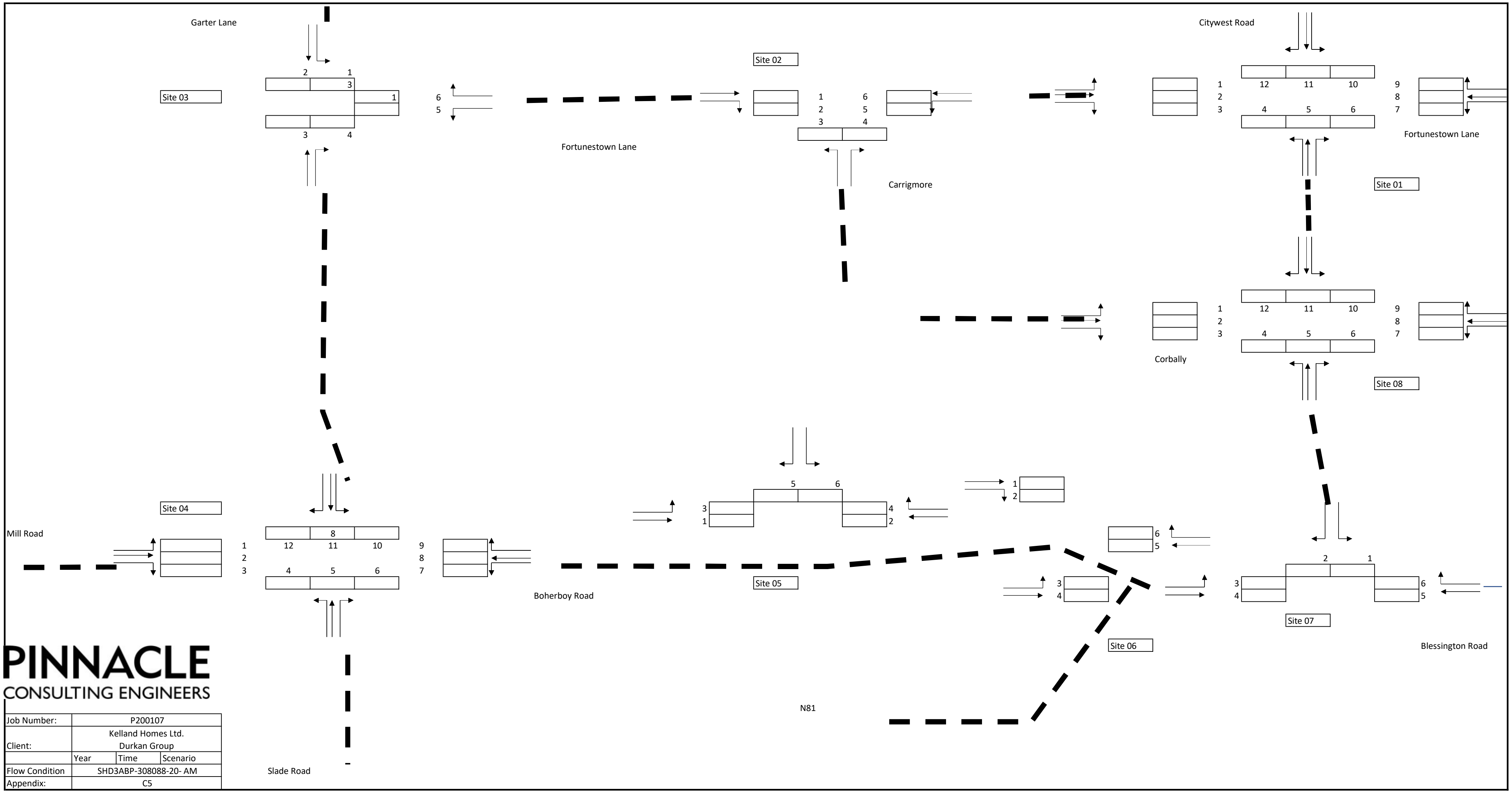
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3ABP- 305563-19 - AM		
Appendix:	C3		



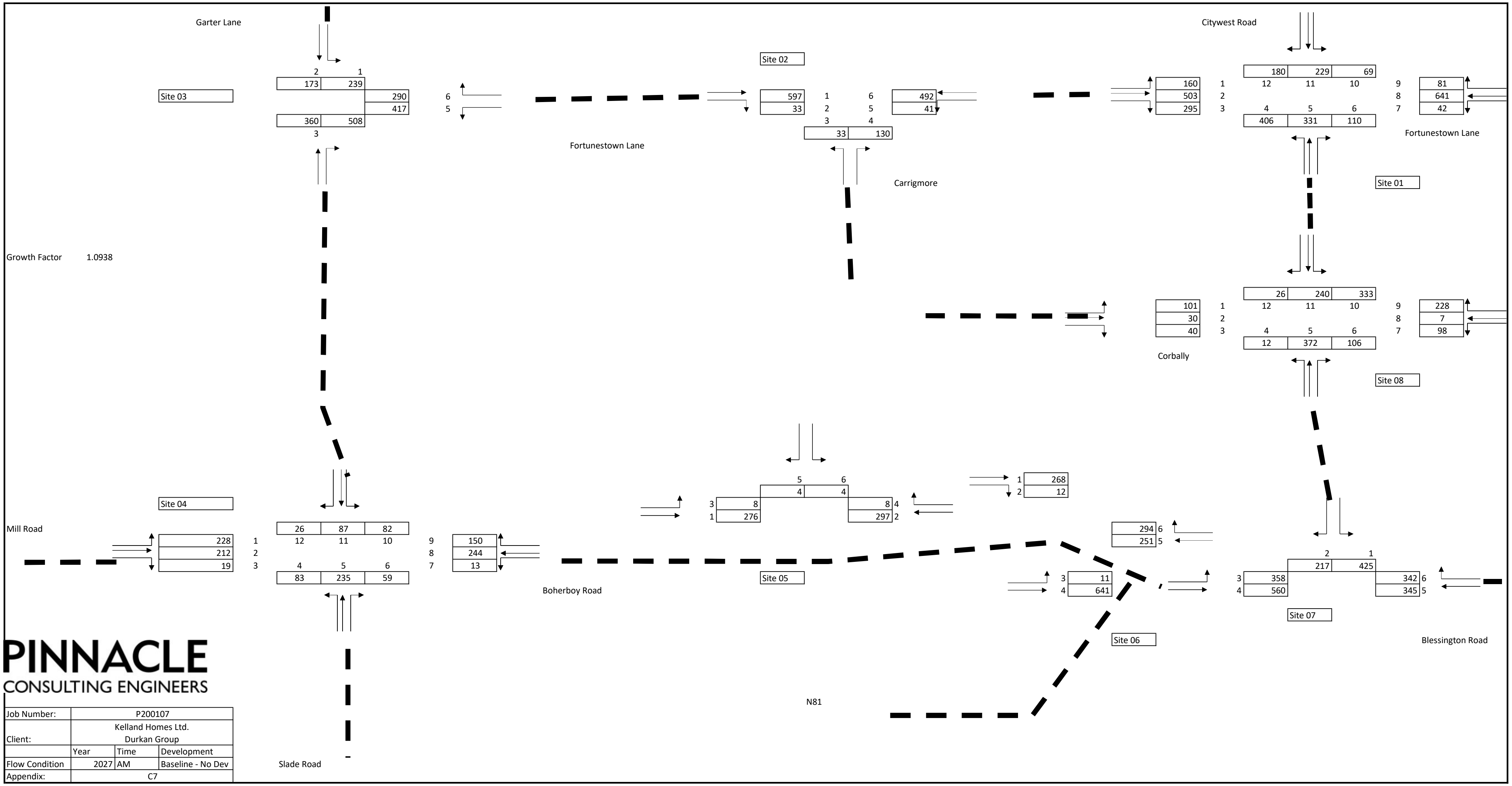
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3ABP- 30556-19 - AM		
Appendix:	C4		

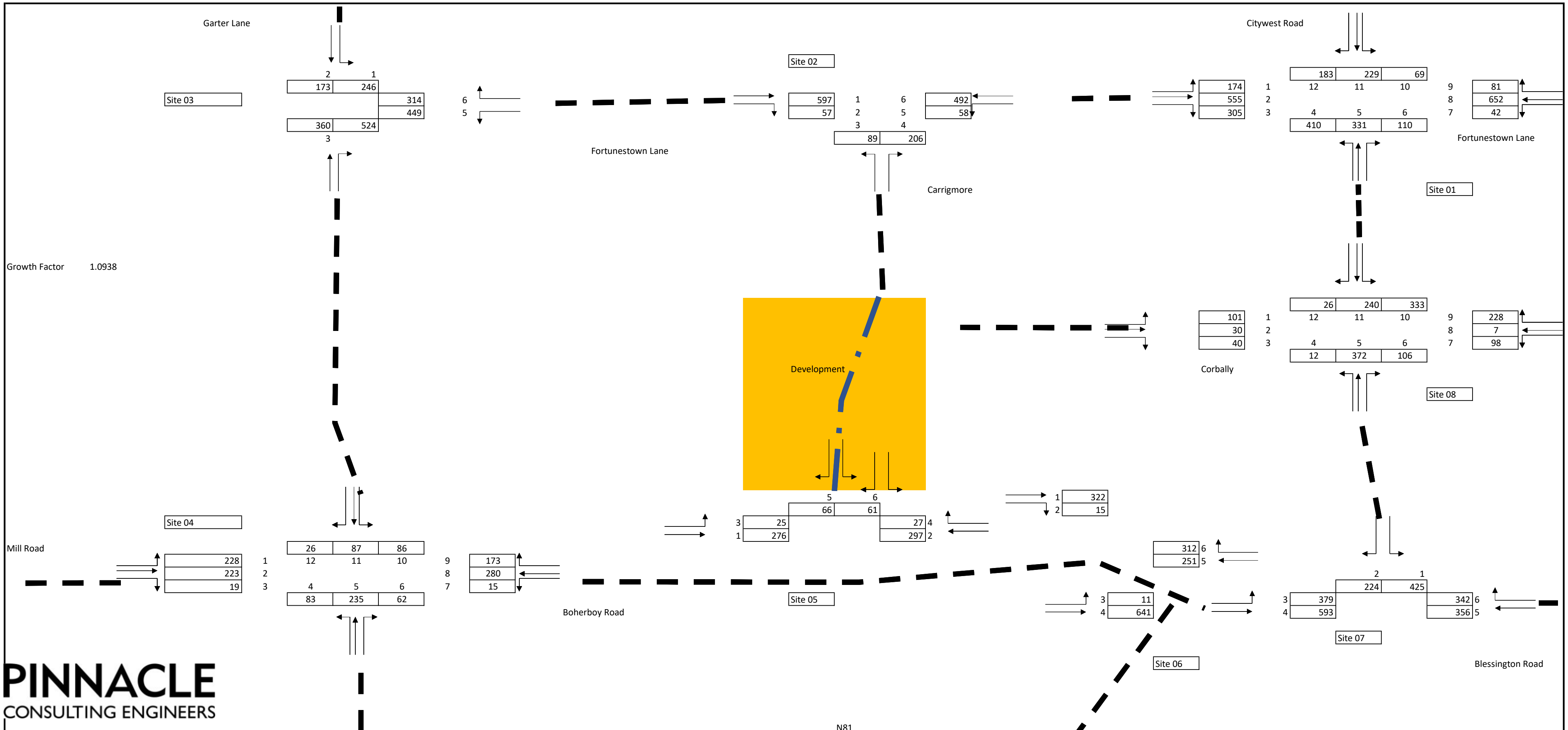


PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3ABP-308088-20- AM		
Appendix:	C5		

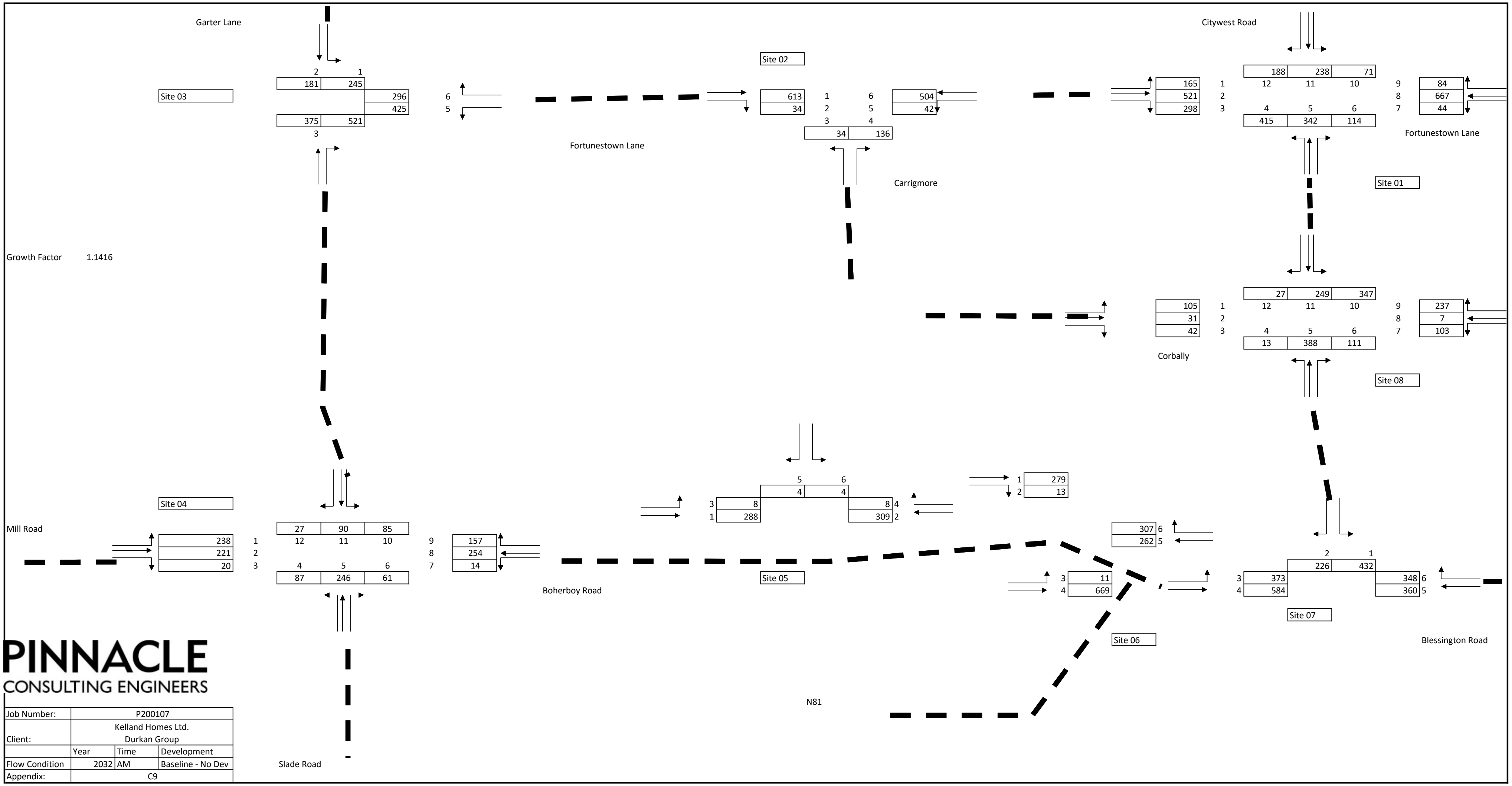


Job Number:	P200107		
	Kelland Homes Ltd.		
Client:	Durkan Group		
	Year	Time	Development
Flow Condition	2027	AM	Baseline - No Dev
Appendix:	C7		



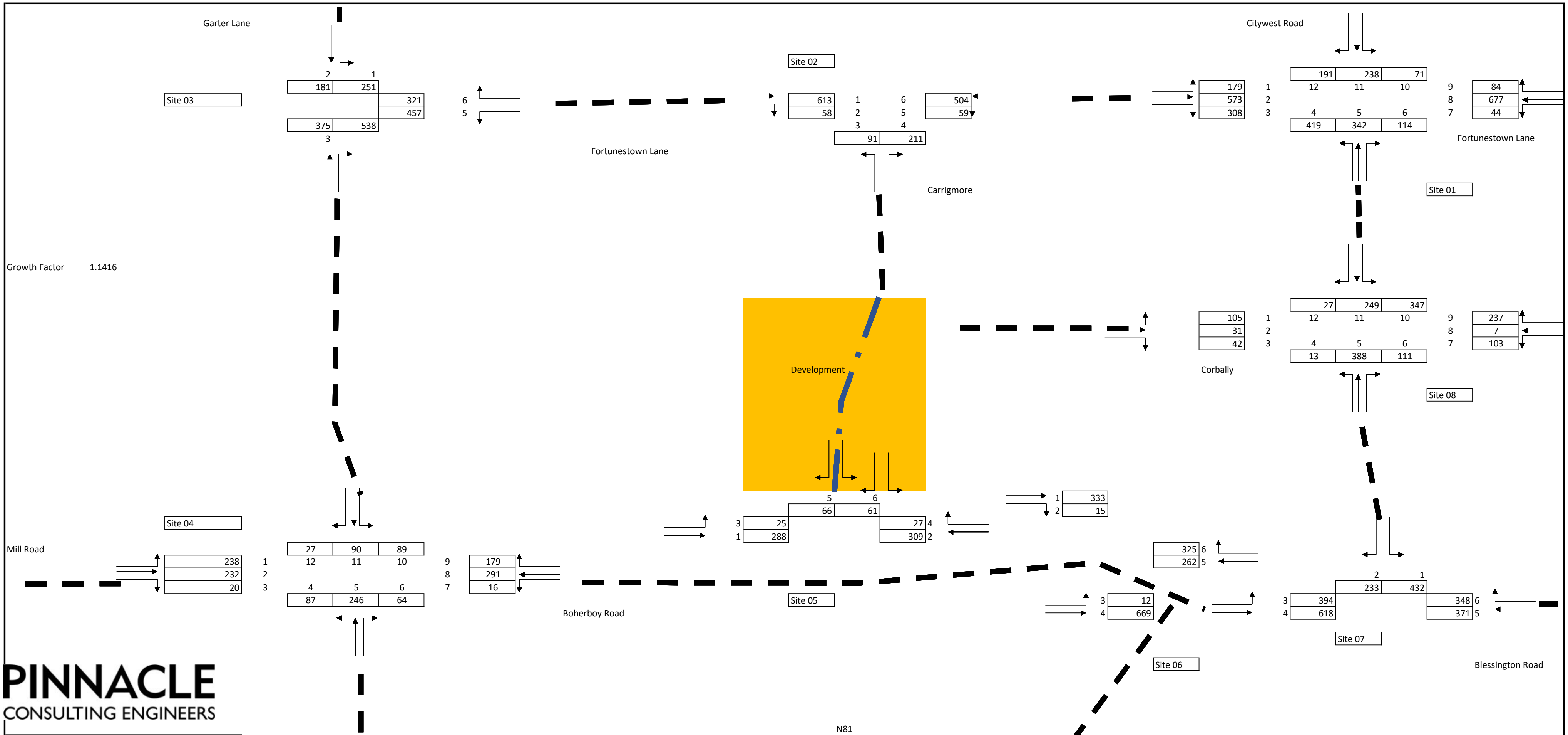
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2027	AM	Baseline + Dev
Appendix:	C8		

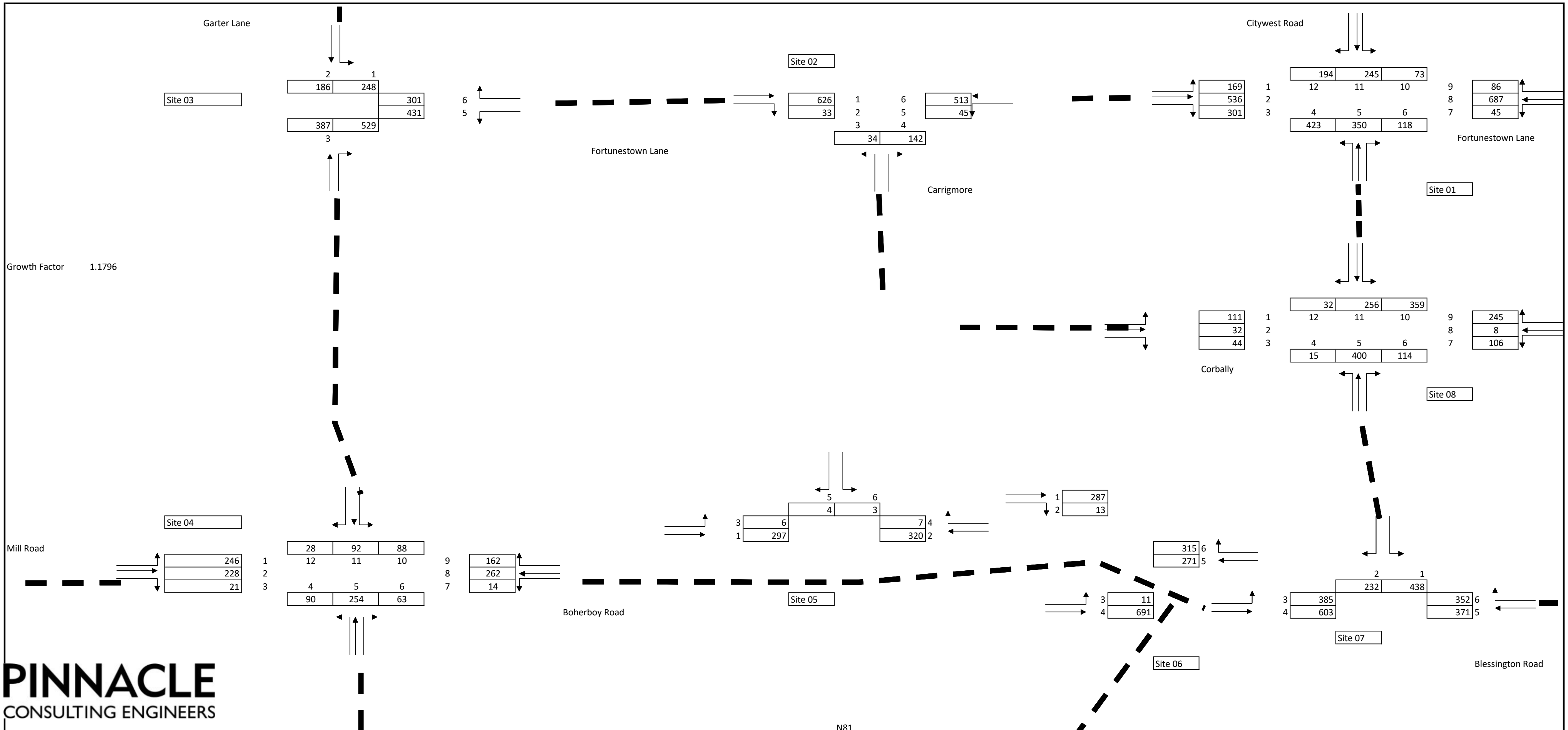


PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
	Kelland Homes Ltd.		
Client:	Durkan Group		
	Year	Time	Development
Flow Condition	2032	AM	Baseline - No Dev
Appendix:	C9		

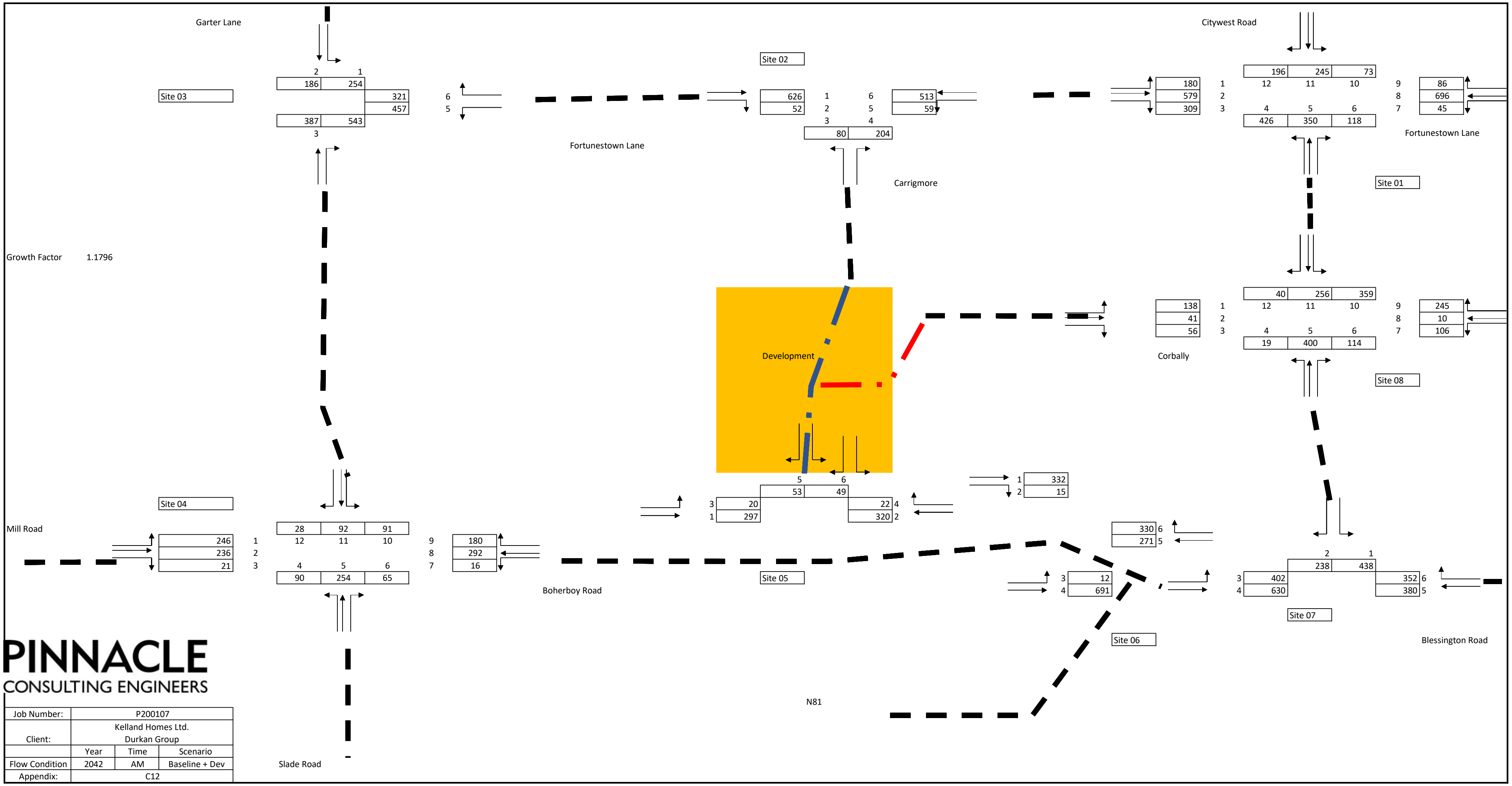


Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2032	AM	Baseline + Dev
Appendix:	C10		

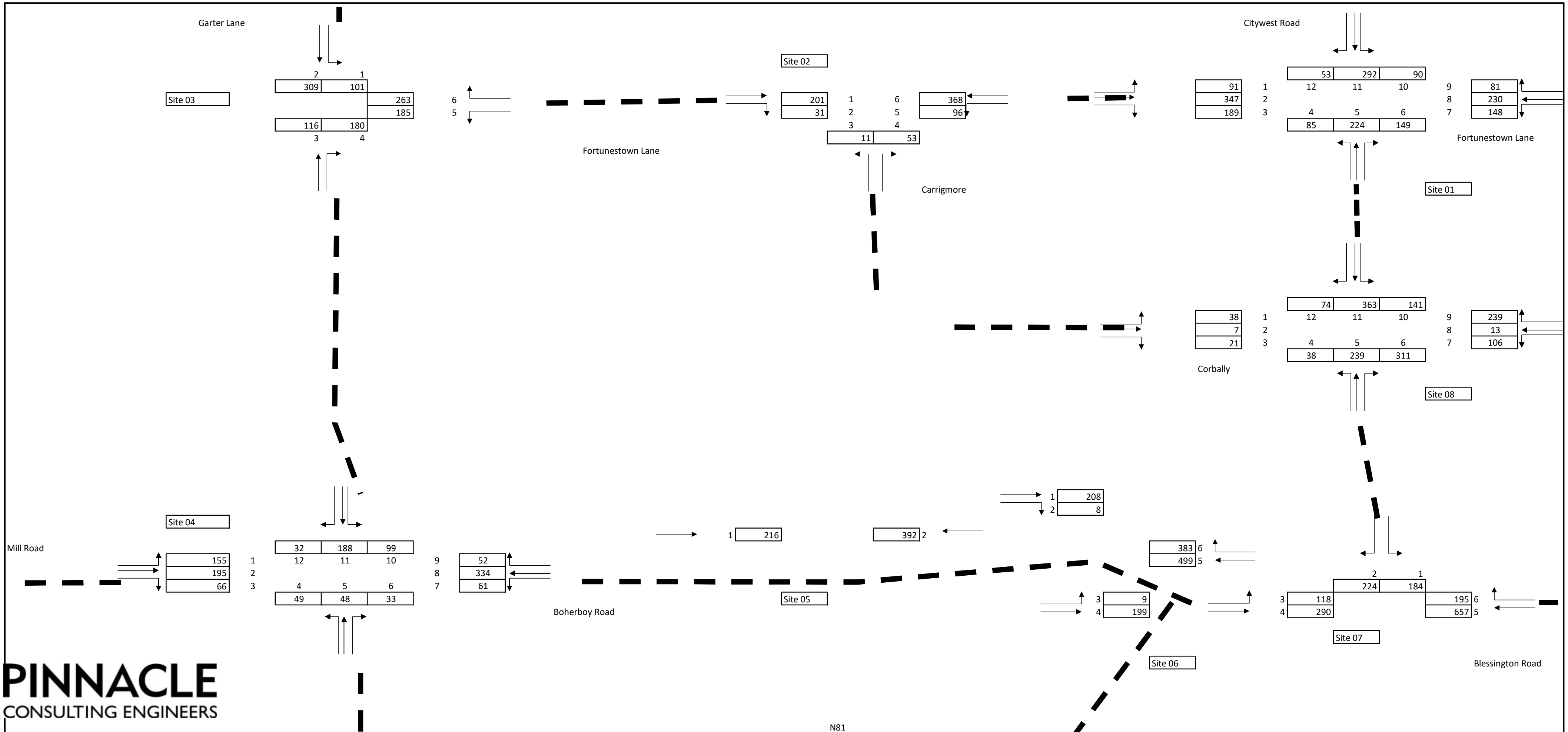


PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Development
Flow Condition	2042	AM	Baseline - No Dev
Appendix:	C11		

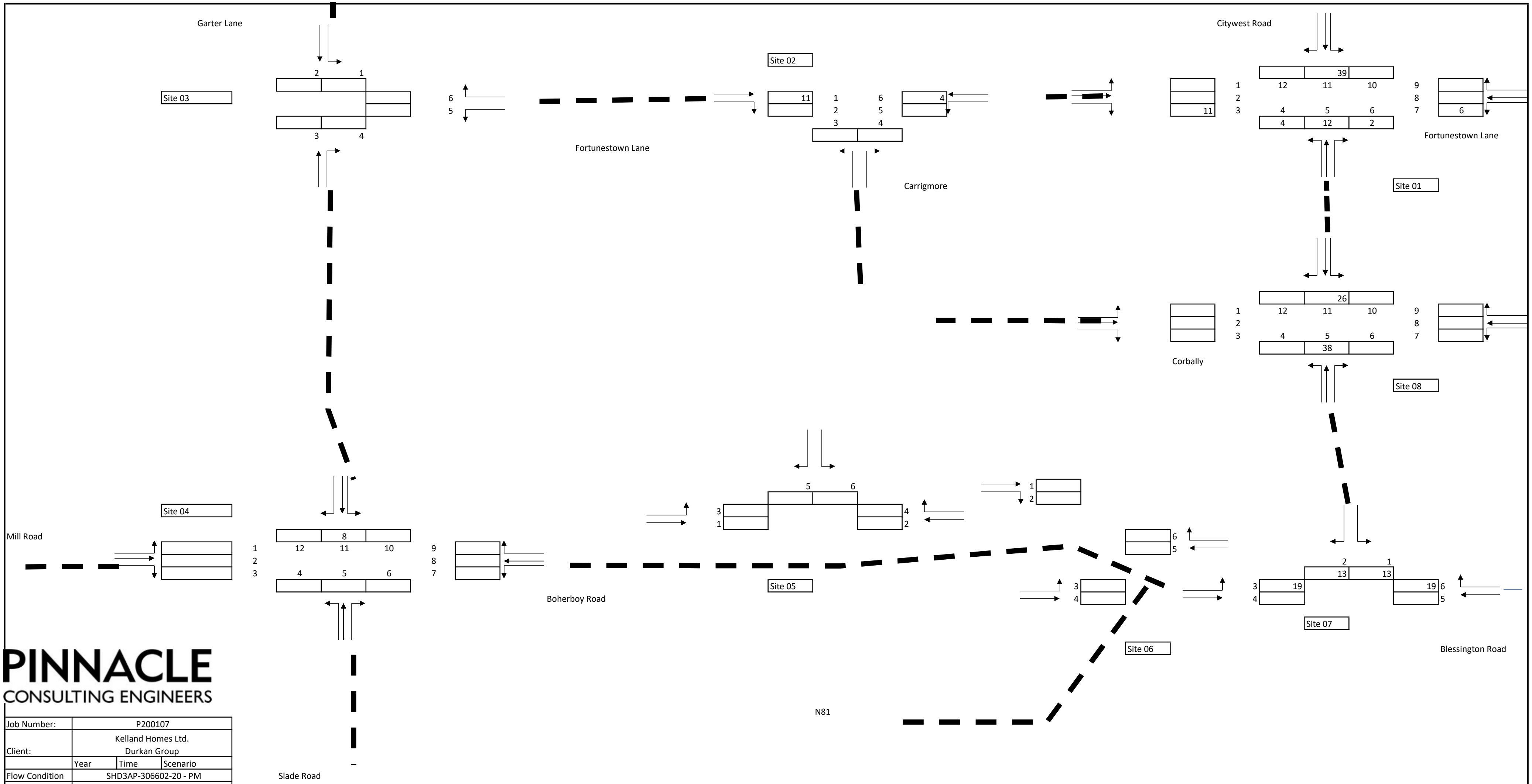


Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2042	AM	Baseline + Dev
Appendix:	C12		



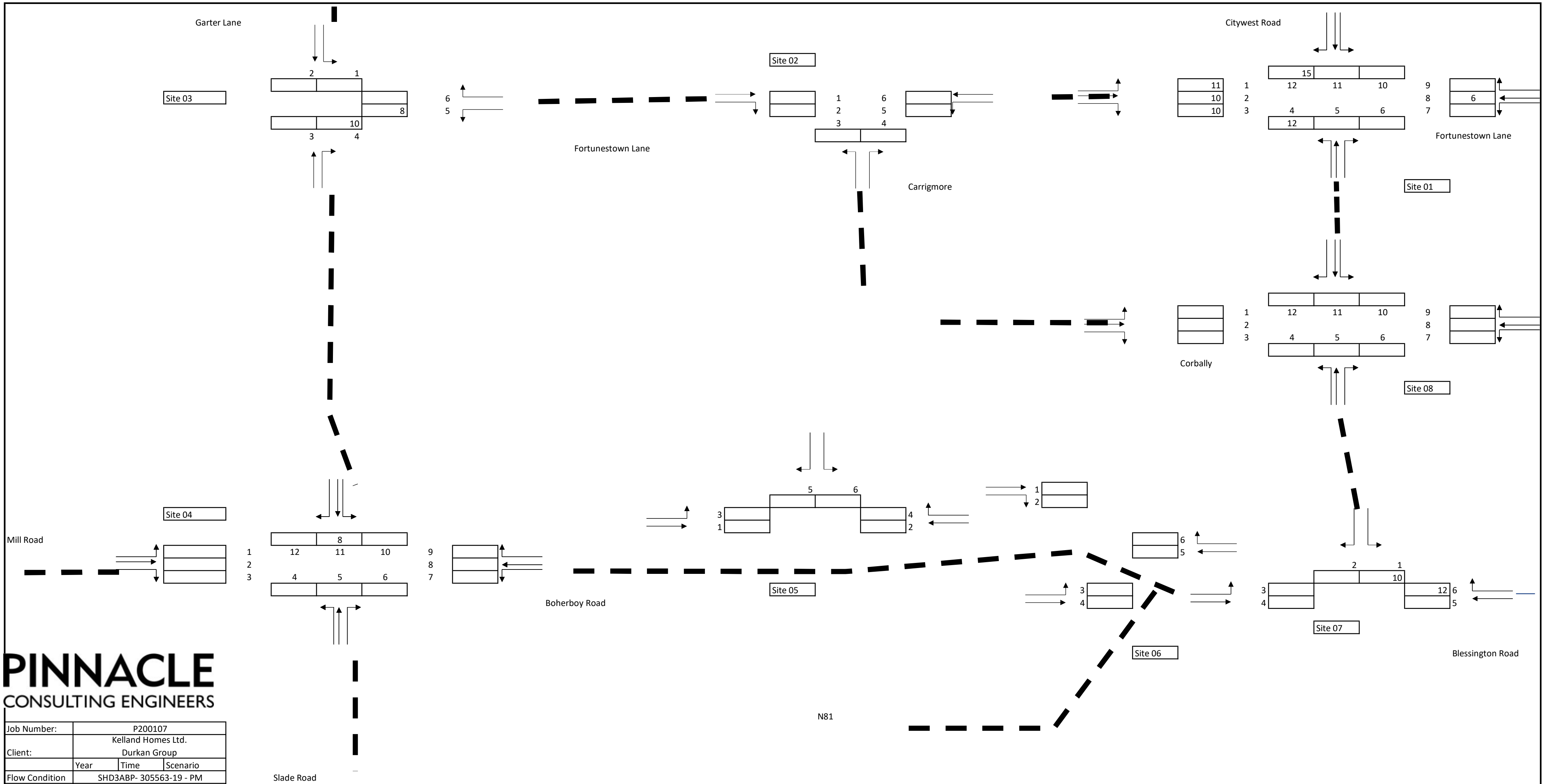
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2020	PM	Survey
Appendix:	C13		



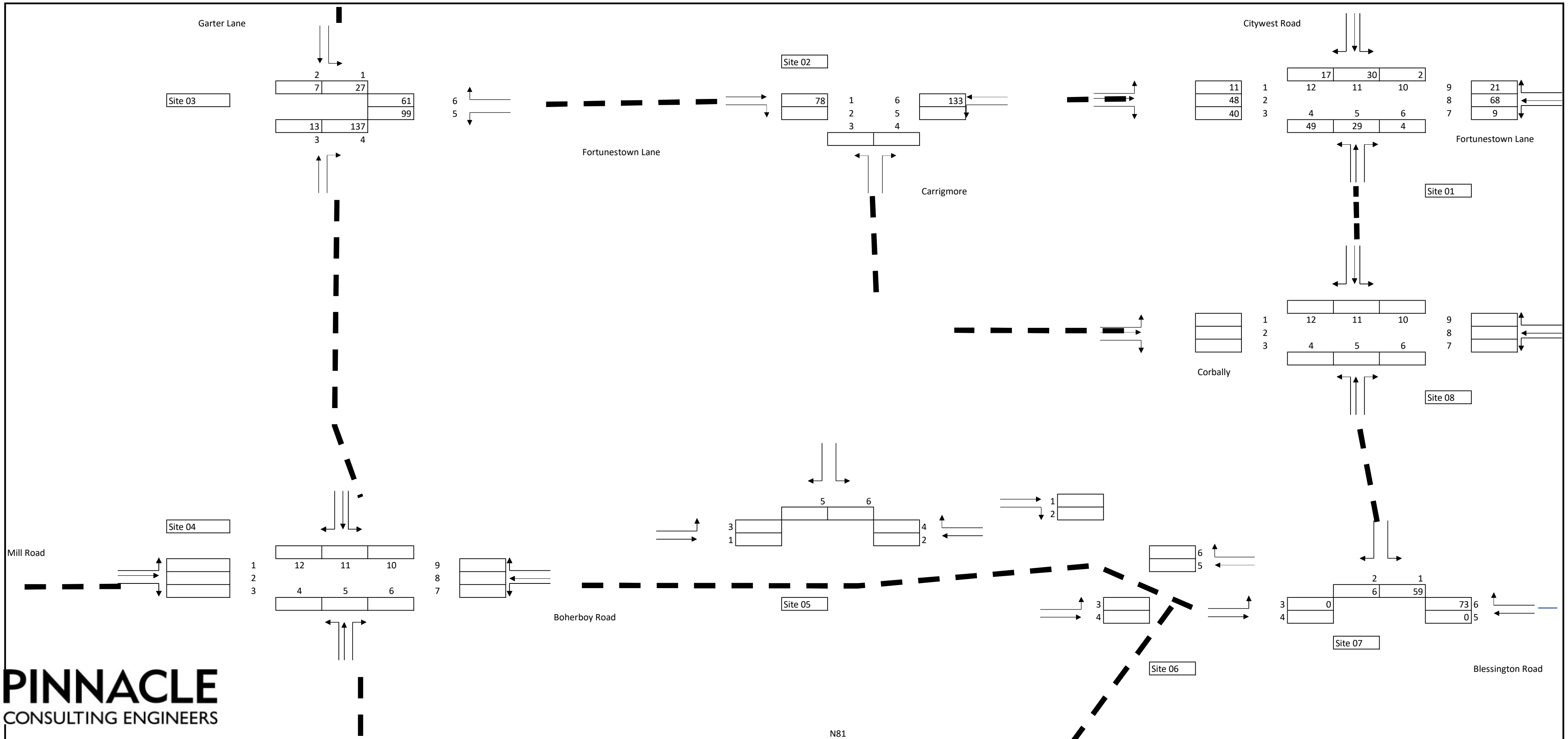
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3AP-306602-20 - PM		
Appendix:	C14		



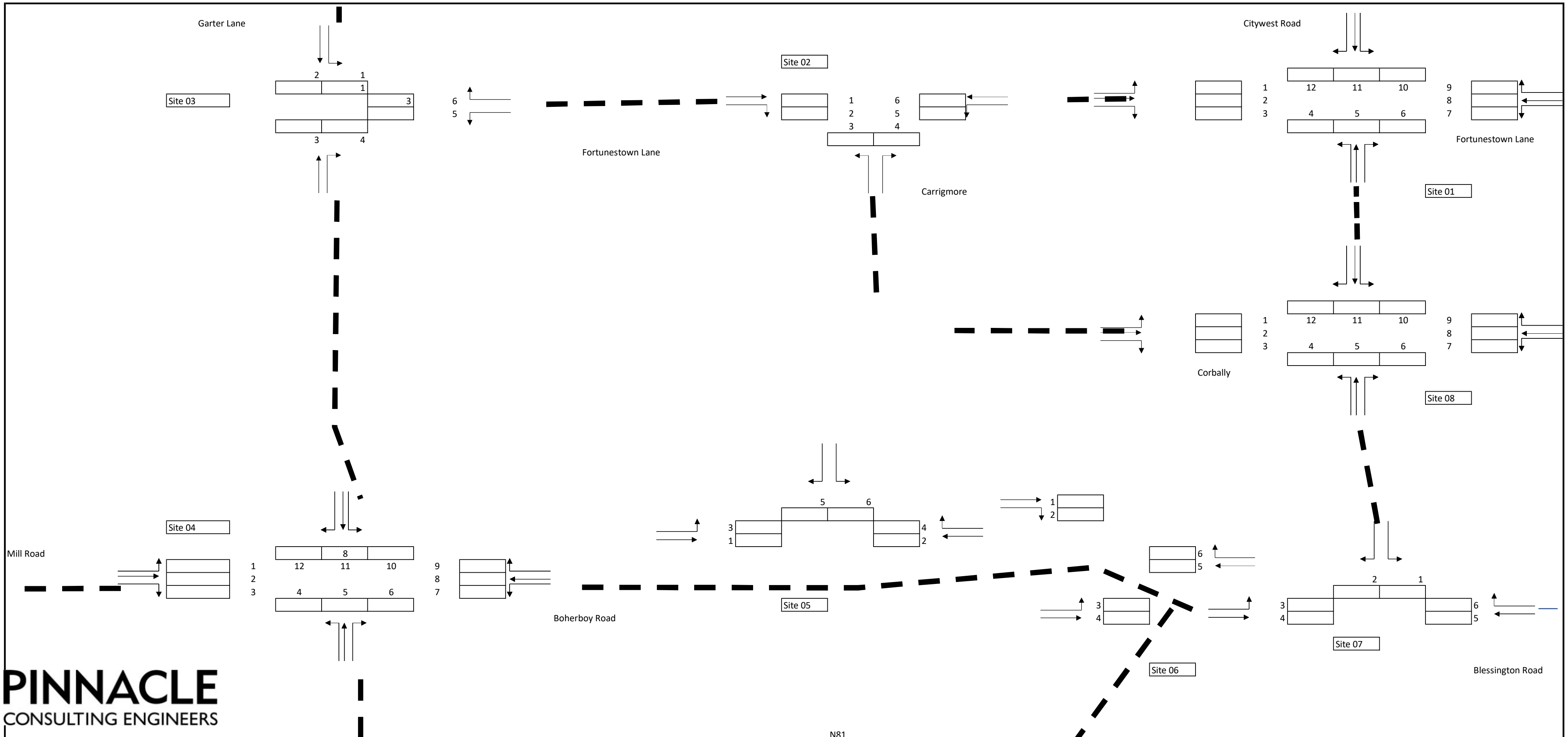
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3ABP- 305563-19 - PM		
Appendix:	C15		



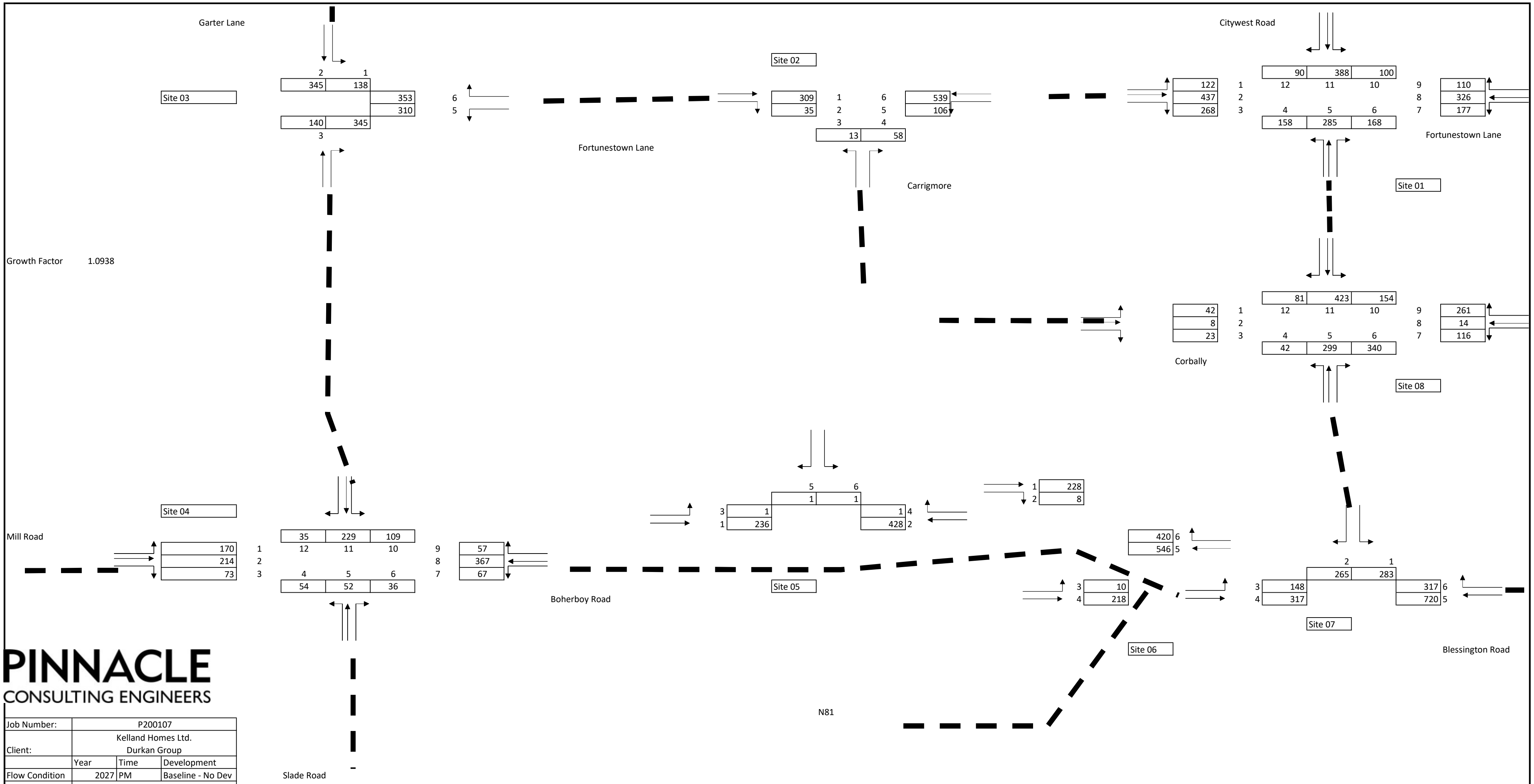
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3ABP- 30556-19 - PM		
Appendix:	C16		



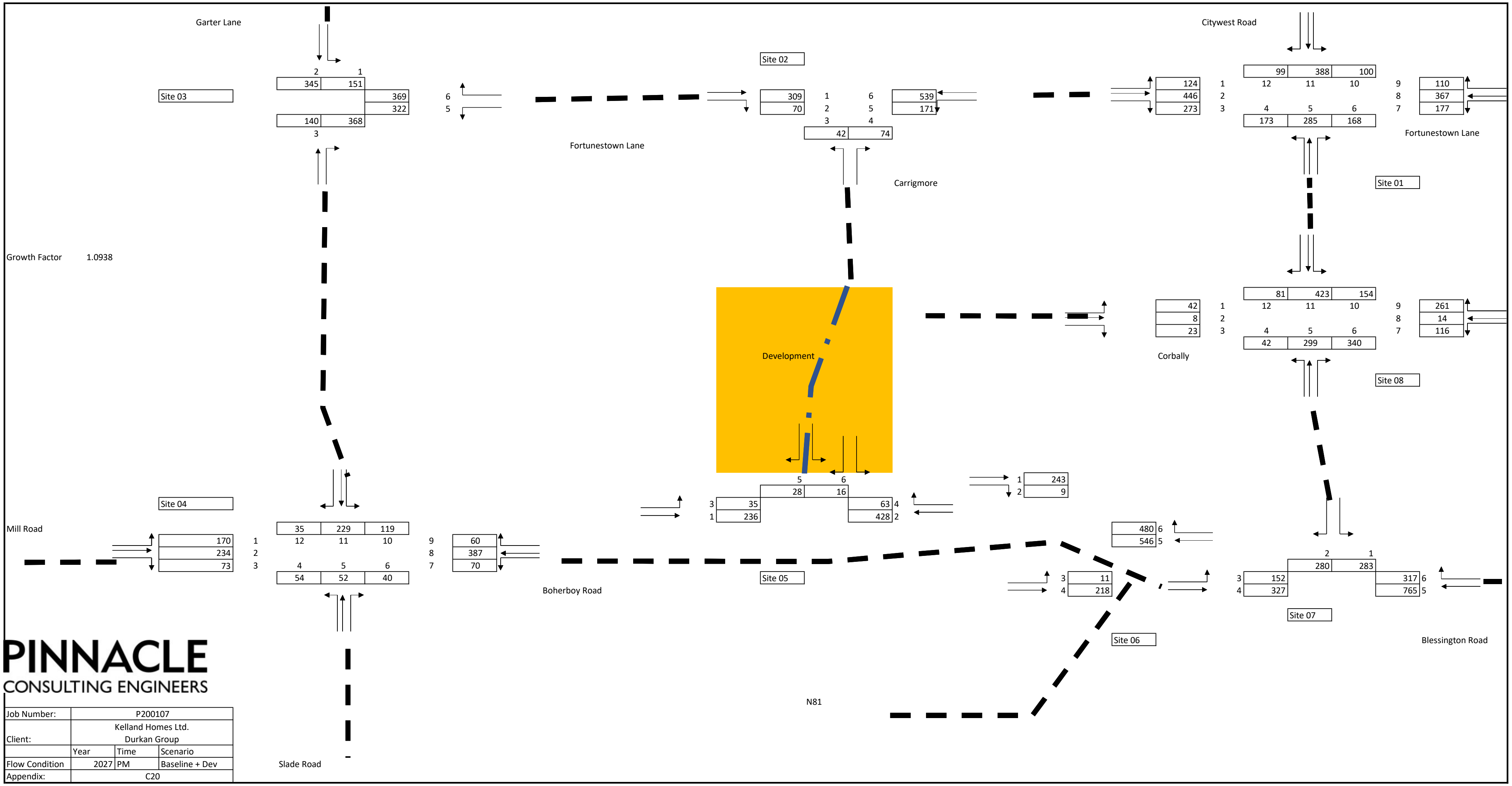
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	SHD3ABP-308088-20 - PM		
Appendix:	C17		



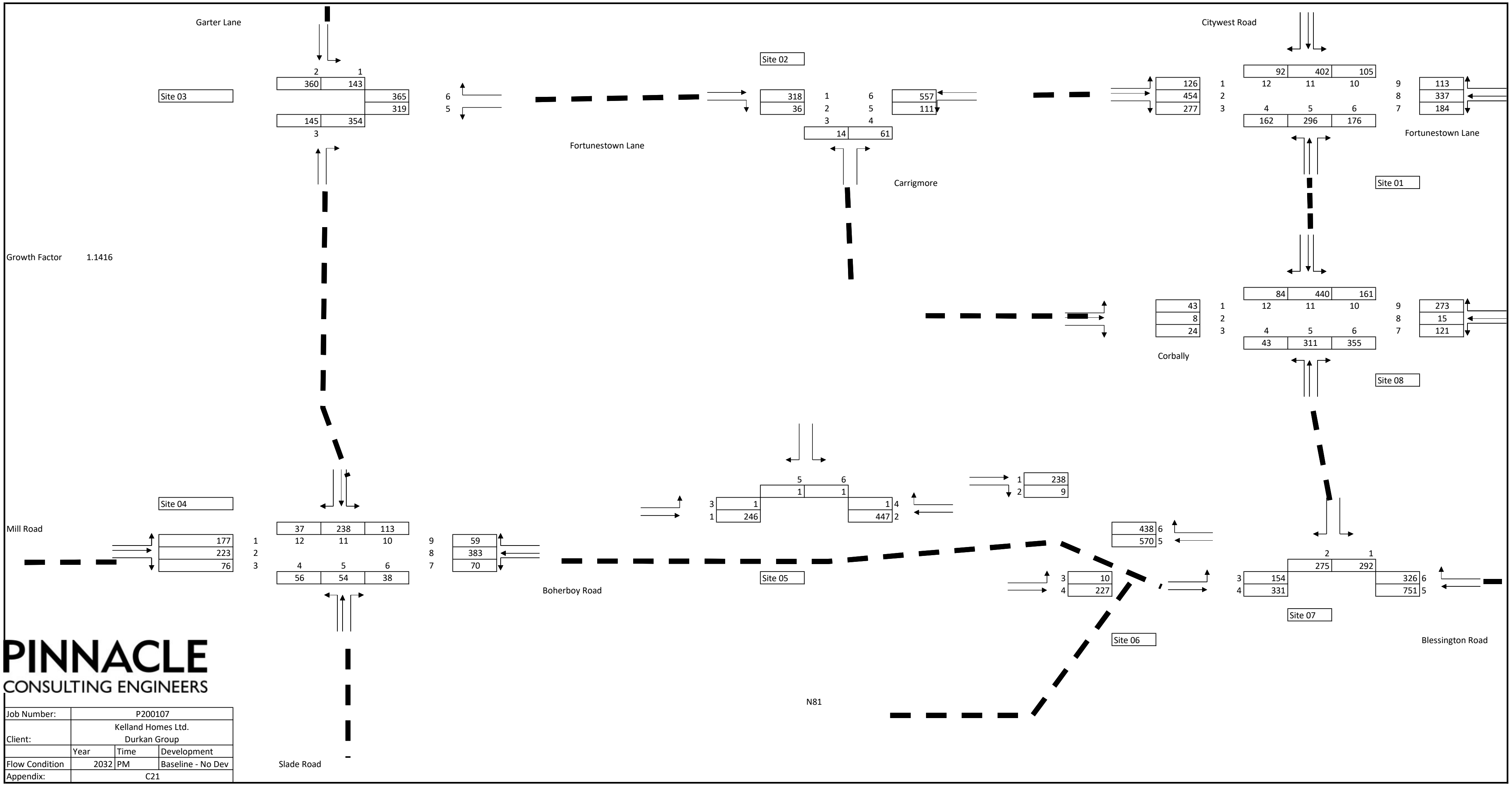
PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
	Kelland Homes Ltd.		
Client:	Durkan Group		
	Year	Time	Development
Flow Condition	2027	PM	Baseline - No Dev
Appendix:	C19		

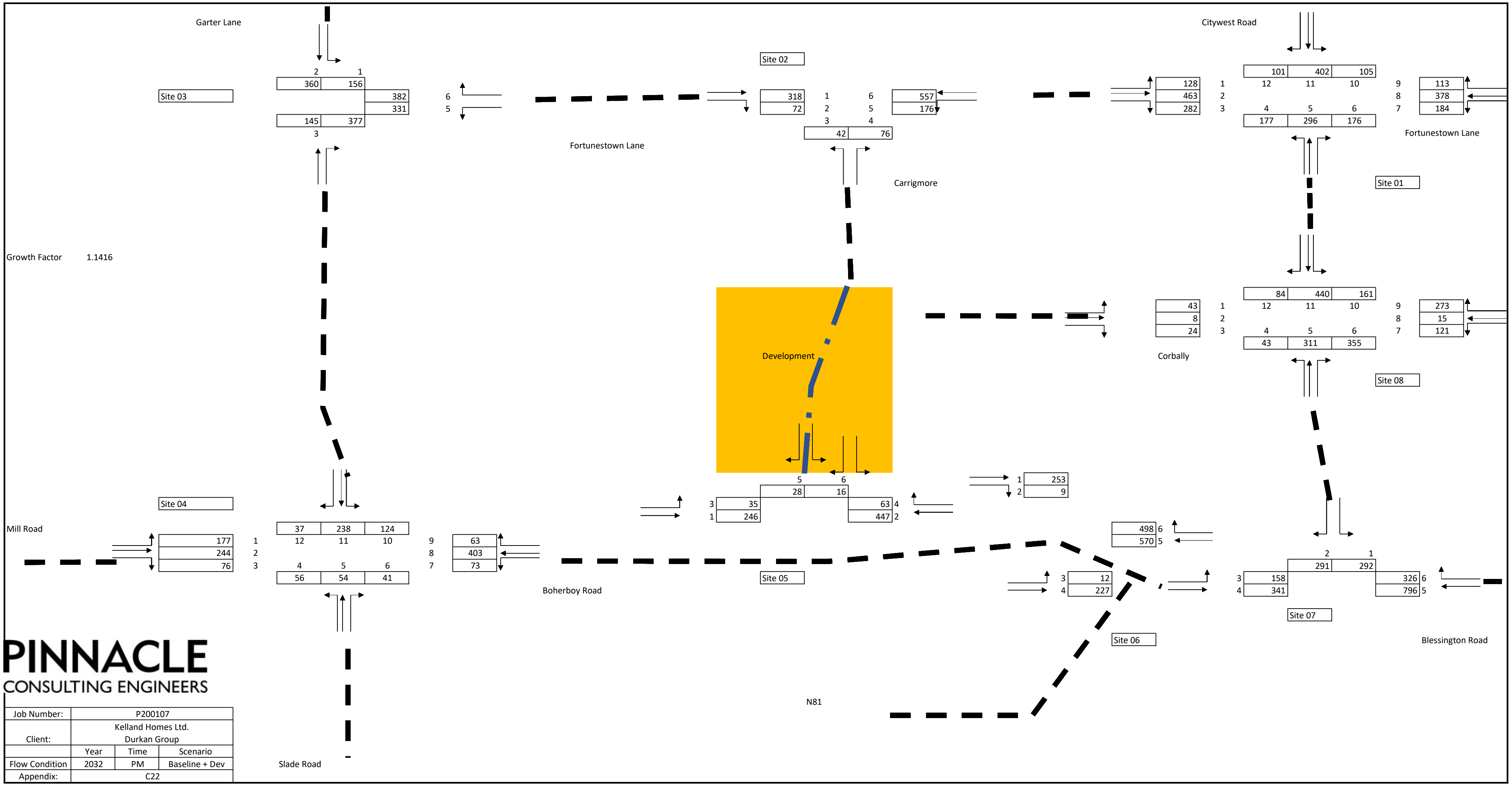


PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2027	PM	Baseline + Dev
Appendix:	C20		

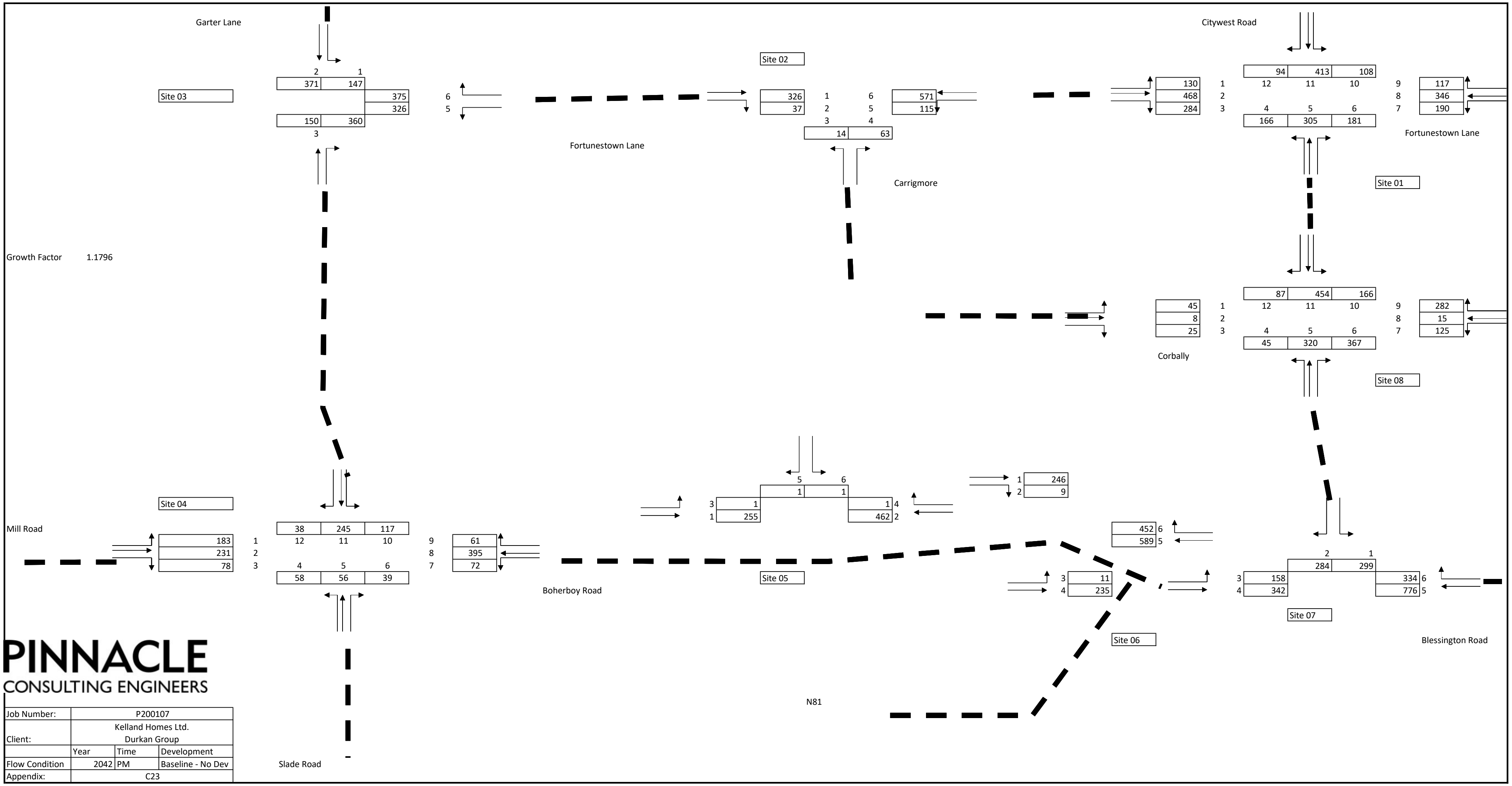


Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Development
Flow Condition	2032	PM	Baseline - No Dev
Appendix:	C21		

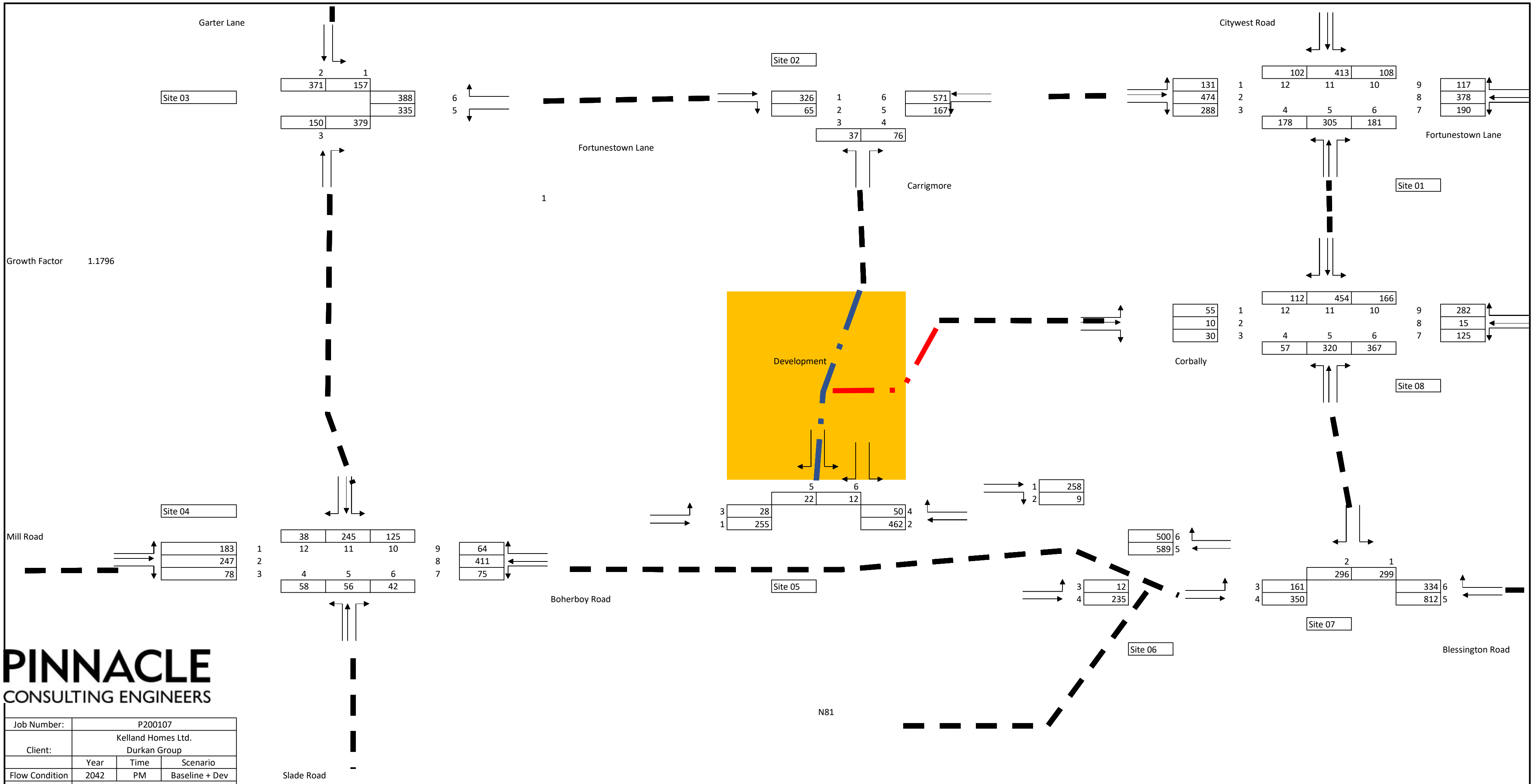


PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2032	PM	Baseline + Dev
Appendix:	C22		



Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Development
Flow Condition	2042	PM	Baseline - No Dev
Appendix:	C23		



PINNACLE
CONSULTING ENGINEERS

Job Number:	P200107		
Client:	Kelland Homes Ltd. Durkan Group		
	Year	Time	Scenario
Flow Condition	2042	PM	Baseline + Dev
Appendix:	C24		

Appendix D Modelling Output

Site 1 – Site Access

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010) (Patch 15 Apr 2011)

Run with file:-
"S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\
Site 05\Site 05.vpi"
(drive-on-the-left) at 18:44:52 on Wednesday, 19 January 2022

RUN INFORMATION
****

```
RUN TITLE       : Pre Plannign Meeting - Junction 5 (Site Access)
LOCATION        : Junction 5
DATE            : 16/11/20
CLIENT          : Kelland/Durkan
ENUMERATOR      : ronan.kearns [SIMON-HP]
JOB NUMBER      : P200107 - BOHERBOY, Boherboy Road Upgrad
STATUS          :
DESCRIPTION     : Check to see what capacity junction has
```

MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA

```
                    MAJOR ROAD (ARM C) --------------------- MAJOR ROAD (ARM A)
                                                 I
                                                 I
                                                 I
                                                 I
                                                 I
                                                 I
                                          MINOR ROAD (ARM B)
```

ARM A IS Boherboy Road - West
ARM B IS Site Access
ARM C IS Boherboy Road - East

STREAM LABELLING CONVENTION

```
        STREAM  A-B  CONTAINS TRAFFIC GOING FROM ARM  A TO ARM B
        STREAM  B-AC CONTAINS TRAFFIC GOING FROM ARM  B TO ARM A AND TO ARM  C
        ETC.
```

GEOMETRIC DATA

DATA ITEM		MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	6.00 M.
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	2.20 M.
- VISIBILITY	(VC-B)	49.00 M.
- BLOCKS TRAFFIC (SPACES)		YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	49.0 M.
- VISIBILITY TO RIGHT	(VB-A)	49.0 M.
- LANE 1 WIDTH	(WB-C)	3.00 M.
- LANE 2 WIDTH	(WB-A)	0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
654.78	0.25	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
517.68	0.24	0.09	0.15	0.34

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
602.34	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Baseline with Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.76	5.64	3.76
ARM B	15.00	45.00	75.00	1.59	2.38	1.59
ARM C	15.00	45.00	75.00	4.05	6.08	4.05

```
 Demand set:        2027 Baseline with Dev AM
 ------------------------------------------------------------
 I                    I         TURNING PROPORTIONS        I
 I                    I         TURNING COUNTS             I
 I                    I        (PERCENTAGE OF H.V.S)       I
 I                    -------------------------------------
 I       TIME         I FROM/TO I ARM  A I ARM  B I ARM  C I
 ------------------------------------------------------------
 I   08.00 - 09.30    I         I        I        I        I
 I                    I ARM  A  I  0.000 I  0.083 I  0.917 I
 I                    I         I    0.0 I   25.0 I  276.0 I
 I                    I         I (  0.0)I ( 10.0)I ( 10.0)I
 I                    I         I        I        I        I
 I                    I ARM  B  I  0.520 I  0.000 I  0.480 I
 I                    I         I   66.0 I    0.0 I   61.0 I
 I                    I         I ( 10.0)I (  0.0)I ( 10.0)I
 I                    I         I        I        I        I
 I                    I ARM  C  I  0.917 I  0.083 I  0.000 I
 I                    I         I  297.0 I   27.0 I    0.0 I
 I                    I         I ( 10.0)I ( 10.0)I (  0.0)I
 I                    I         I        I        I        I
 ------------------------------------------------------------
 TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
 DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED


               QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
               --------------------------------------------------------
                FOR DEMAND SET         2027 Baseline with Dev AM
                AND FOR TIME PERIOD        1

 ------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/      PER ARRIVING  I
 I                                (RFC)   (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 08.00-08.15                                                                                                   I
 I   B-AC      1.59      7.37    0.216                0.00   0.27        3.9                             0.17      I
 I   C-AB      0.50     10.80    0.047                0.00   0.07        1.0                             0.10      I
 I   C-A       3.56                                                                                                I
 I   A-B       0.31                                                                                                I
 I   A-C       3.46                                                                                                I
 I                                                                                                                 I

 ------------------------------------------------------------------------------------------------------------------


 ------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/      PER ARRIVING  I
 I                                (RFC)   (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 08.15-08.30                                                                                                   I
 I   B-AC      1.90      7.11    0.268                0.27   0.36        5.2                             0.19      I
 I   C-AB      0.65     11.14    0.058                0.07   0.09        1.4                             0.10      I
 I   C-A       4.20                                                                                                I
 I   A-B       0.37                                                                                                I
 I   A-C       4.14                                                                                                I
 I                                                                                                                 I

 ------------------------------------------------------------------------------------------------------------------


 ------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/      PER ARRIVING  I
 I                                (RFC)   (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 08.30-08.45                                                                                                   I
 I   B-AC      2.33      6.73    0.346                0.36   0.52        7.5                             0.23      I
 I   C-AB      0.92     11.70    0.079                0.09   0.14        2.2                             0.09      I
 I   C-A       5.03                                                                                                I
 I   A-B       0.46                                                                                                I
 I   A-C       5.06                                                                                                I
 I                                                                                                                 I

 ------------------------------------------------------------------------------------------------------------------
```

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	2.33	6.73	0.346		0.52	0.52	7.8		0.23
C-AB	0.92	11.70	0.079		0.14	0.14	2.2		0.09
C-A	5.02								
A-B	0.46								
A-C	5.06								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	1.90	7.10	0.268		0.52	0.37	5.8		0.19
C-AB	0.65	11.14	0.059		0.14	0.10	1.4		0.10
C-A	4.20								
A-B	0.37								
A-C	4.14								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.59	7.37	0.216		0.37	0.28	4.3		0.17
C-AB	0.51	10.80	0.047		0.10	0.07	1.1		0.10
C-A	3.56								
A-B	0.31								
A-C	3.46								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.3	
08.30	0.4	
08.45	0.5	*
09.00	0.5	*
09.15	0.4	
09.30	0.3	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	174.8	116.5	34.5	0.20	34.5	0.20
C-AB	62.3	41.6	9.3	0.15	9.3	0.15
C-A	383.6	255.8				
A-B	34.4	22.9				
A-C	379.9	253.3				
ALL	1035.1	690.0	43.8	0.04	43.8	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
654.78	0.25	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
517.68	0.24	0.09	0.15	0.34

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
602.34	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Baseline with Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.92	5.89	3.92
ARM B	15.00	45.00	75.00	1.59	2.38	1.59
ARM C	15.00	45.00	75.00	4.20	6.30	4.20

Demand set: 2032 Baseline with Dev AM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.080	0.920
		0.0	25.0	289.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.520	0.000	0.480
		66.0	0.0	61.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.920	0.080	0.000
		309.0	27.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Baseline with Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	1.59	7.32	0.218		0.00	0.27	3.9		0.17
C-AB	0.51	10.87	0.047		0.00	0.07	1.0		0.10
C-A	3.70								
A-B	0.31								
A-C	3.63								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	1.90	7.04	0.270		0.27	0.36	5.3		0.19
C-AB	0.66	11.22	0.059		0.07	0.09	1.4		0.09
C-A	4.37								
A-B	0.37								
A-C	4.33								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	2.33	6.64	0.351		0.36	0.53	7.6		0.23
C-AB	0.94	11.81	0.080		0.09	0.15	2.2		0.09
C-A	5.22								
A-B	0.46								
A-C	5.30								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	2.33	6.64	0.351		0.53	0.53	8.0		0.23
C-AB	0.95	11.81	0.080		0.15	0.15	2.2		0.09
C-A	5.22								
A-B	0.46								
A-C	5.30								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	1.90	7.04	0.270		0.53	0.38	5.9		0.20
C-AB	0.66	11.22	0.059		0.15	0.10	1.5		0.09
C-A	4.37								
A-B	0.37								
A-C	4.33								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.59	7.32	0.218		0.38	0.28	4.4		0.18
C-AB	0.51	10.87	0.047		0.10	0.07	1.1		0.10
C-A	3.70								
A-B	0.31								
A-C	3.63								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.3	
08.30	0.4	
08.45	0.5	*
09.00	0.5	*
09.15	0.4	
09.30	0.3	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	174.8	116.5	35.0	0.20	35.0	0.20
C-AB	63.7	42.4	9.5	0.15	9.5	0.15
C-A	398.8	265.9				
A-B	34.4	22.9				
A-C	397.8	265.2				
ALL	1069.5	713.0	44.5	0.04	44.5	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
654.78	0.25	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
517.68	0.24	0.09	0.15	0.34

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
602.34	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Baseline with Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.96	5.94	3.96
ARM B	15.00	45.00	75.00	1.27	1.91	1.27
ARM C	15.00	45.00	75.00	4.28	6.41	4.28

Demand set: 2042 Baseline with Dev AM

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.063	0.937
		0.0	20.0	297.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.520	0.000	0.480
		53.0	0.0	49.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.936	0.064	0.000
		320.0	22.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Baseline with Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	1.28	7.30	0.175		0.00	0.21	3.0		0.17
C-AB	0.42	10.95	0.039		0.00	0.05	0.8		0.09
C-A	3.87								
A-B	0.25								
A-C	3.73								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	1.53	7.01	0.218		0.21	0.27	4.0		0.18
C-AB	0.55	11.32	0.048		0.05	0.07	1.1		0.09
C-A	4.58								
A-B	0.30								
A-C	4.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	1.87	6.62	0.283		0.27	0.39	5.6		0.21
C-AB	0.79	11.94	0.066		0.07	0.11	1.7		0.09
C-A	5.49								
A-B	0.37								
A-C	5.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	1.87	6.62	0.283		0.39	0.39	5.8		0.21
C-AB	0.79	11.94	0.066		0.11	0.11	1.7		0.09
C-A	5.49								
A-B	0.37								
A-C	5.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	1.53	7.01	0.218		0.39	0.28	4.4		0.18
C-AB	0.55	11.32	0.049		0.11	0.07	1.1		0.09
C-A	4.57								
A-B	0.30								
A-C	4.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.28	7.30	0.175		0.28	0.22	3.3		0.17
C-AB	0.42	10.96	0.039		0.07	0.05	0.8		0.09
C-A	3.87								
A-B	0.25								
A-C	3.73								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.3
08.45	0.4
09.00	0.4
09.15	0.3
09.30	0.2

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	140.4	93.6	26.2	0.19	26.2	0.19
C-AB	52.8	35.2	7.2	0.14	7.2	0.14
C-A	418.0	278.7				
A-B	27.5	18.4				
A-C	408.8	272.5				
ALL	1047.5	698.3	33.3	0.03	33.3	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
654.78	0.25	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
517.68	0.24	0.09	0.15	0.34

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
602.34	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Baseline with Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.39	5.08	3.39
ARM B	15.00	45.00	75.00	0.55	0.83	0.55
ARM C	15.00	45.00	75.00	6.14	9.21	6.14

Demand set: 2027 Baseline with Dev PM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.129	0.871
		0.0	35.0	236.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.636	0.000	0.364
		28.0	0.0	16.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.872	0.128	0.000
		428.0	63.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Baseline with Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.55	6.87	0.080		0.00	0.09	1.2		0.16
C-AB	1.41	12.04	0.117		0.00	0.24	3.5		0.09
C-A	4.75								
A-B	0.44								
A-C	2.96								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	0.66	6.54	0.101		0.09	0.11	1.6		0.17
C-AB	1.89	12.63	0.150		0.24	0.33	4.9		0.09
C-A	5.47								
A-B	0.52								
A-C	3.54								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	0.81	6.08	0.133		0.11	0.15	2.2		0.19
C-AB	2.75	13.51	0.203		0.33	0.50	7.6		0.09
C-A	6.26								
A-B	0.64								
A-C	4.33								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	0.81	6.08	0.133		0.15	0.15	2.3		0.19
C-AB	2.75	13.51	0.204		0.50	0.51	7.7		0.09
C-A	6.26								
A-B	0.64								
A-C	4.33								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	0.66	6.54	0.101		0.15	0.11	1.8		0.17
C-AB	1.89	12.64	0.150		0.51	0.34	5.1		0.09
C-A	5.46								
A-B	0.52								
A-C	3.54								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.55	6.87	0.080		0.11	0.09	1.4		0.16
C-AB	1.42	12.05	0.118		0.34	0.24	3.6		0.09
C-A	4.74								
A-B	0.44								
A-C	2.96								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.2
18.00	0.2
18.15	0.1
18.30	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.2	
17.30	0.3	
17.45	0.5	*
18.00	0.5	*
18.15	0.3	
18.30	0.2	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	60.6	40.4	10.4	0.17	10.5	0.17
C-AB	181.7	121.2	32.4	0.18	32.4	0.18
C-A	494.1	329.4				
A-B	48.2	32.1				
A-C	324.8	216.6				
ALL	1109.4	739.6	42.9	0.04	42.9	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
654.78	0.25	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
517.68	0.24	0.09	0.15	0.34

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
602.34	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Baseline with Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.51	5.27	3.51
ARM B	15.00	45.00	75.00	0.55	0.83	0.55
ARM C	15.00	45.00	75.00	6.38	9.56	6.38

Demand set: 2032 Baseline with Dev PM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
17.00 - 18.30				
	ARM A	0.000	0.125	0.875
		0.0	35.0	246.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.636	0.000	0.364
		28.0	0.0	16.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.876	0.124	0.000
		447.0	63.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Baseline with Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.55	6.81	0.081		0.00	0.09	1.3		0.16
C-AB	1.45	12.18	0.119		0.00	0.24	3.6		0.09
C-A	4.95								
A-B	0.44								
A-C	3.09								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	0.66	6.47	0.102		0.09	0.11	1.6		0.17
C-AB	1.95	12.79	0.152		0.24	0.34	5.1		0.09
C-A	5.70								
A-B	0.52								
A-C	3.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	0.81	5.99	0.135		0.11	0.15	2.2		0.19
C-AB	2.85	13.72	0.208		0.34	0.53	8.0		0.09
C-A	6.50								
A-B	0.64								
A-C	4.51								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	0.81	5.98	0.135		0.15	0.15	2.3		0.19
C-AB	2.86	13.72	0.208		0.53	0.53	8.1		0.09
C-A	6.50								
A-B	0.64								
A-C	4.51								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	0.66	6.46	0.102		0.15	0.11	1.8		0.17
C-AB	1.95	12.80	0.152		0.53	0.35	5.3		0.09
C-A	5.69								
A-B	0.52								
A-C	3.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.55	6.81	0.081		0.11	0.09	1.4		0.16
C-AB	1.46	12.19	0.120		0.35	0.25	3.8		0.09
C-A	4.94								
A-B	0.44								
A-C	3.09								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.2
18.00	0.2
18.15	0.1
18.30	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.2	
17.30	0.3	
17.45	0.5	*
18.00	0.5	*
18.15	0.4	
18.30	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	60.6	40.4	10.6	0.17	10.6	0.17
C-AB	187.7	125.1	33.9	0.18	33.9	0.18
C-A	514.3	342.8				
A-B	48.2	32.1				
A-C	338.6	225.7				
ALL	1149.3	766.2	44.5	0.04	44.5	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
654.78	0.25	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
517.68	0.24	0.09	0.15	0.34

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
602.34	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Baseline with Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.54	5.31	3.54
ARM B	15.00	45.00	75.00	0.43	0.64	0.43
ARM C	15.00	45.00	75.00	6.40	9.60	6.40

Demand set: 2042 Baseline with Dev PM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.099	0.901
		0.0	28.0	255.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.647	0.000	0.353
		22.0	0.0	12.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.902	0.098	0.000
		462.0	50.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Baseline with Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.43	6.79	0.063		0.00	0.07	1.0		0.16
C-AB	1.17	12.30	0.095		0.00	0.19	2.8		0.09
C-A	5.25								
A-B	0.35								
A-C	3.20								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	0.51	6.44	0.079		0.07	0.08	1.2		0.17
C-AB	1.58	12.94	0.122		0.19	0.28	4.2		0.09
C-A	6.09								
A-B	0.42								
A-C	3.82								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	0.62	5.96	0.105		0.08	0.12	1.7		0.19
C-AB	2.33	13.90	0.168		0.28	0.43	6.5		0.09
C-A	7.07								
A-B	0.51								
A-C	4.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	0.62	5.96	0.105		0.12	0.12	1.7		0.19
C-AB	2.33	13.91	0.168		0.43	0.44	6.6		0.09
C-A	7.06								
A-B	0.51								
A-C	4.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	0.51	6.44	0.079		0.12	0.09	1.3		0.17
C-AB	1.58	12.95	0.122		0.44	0.29	4.4		0.09
C-A	6.09								
A-B	0.42								
A-C	3.82								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.43	6.78	0.063		0.09	0.07	1.0		0.16
C-AB	1.18	12.31	0.096		0.29	0.20	3.0		0.09
C-A	5.25								
A-B	0.35								
A-C	3.20								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.3
17.45	0.4
18.00	0.4
18.15	0.3
18.30	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	46.8	31.2	8.0	0.17	8.0	0.17
C-AB	152.6	101.7	27.6	0.18	27.6	0.18
C-A	552.2	368.1				
A-B	38.5	25.7				
A-C	351.0	234.0				
ALL	1141.1	760.7	35.6	0.03	35.6	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

=== end of file ===

Printed at 18:45:08 on 19/01/2022]

Site 2 – Boherboy Road/N81

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010) (Patch 15 Apr 2011)

FOR SALES AND DISTRIBUTION INFORMATION,
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Run with file:-
"S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\
Site 06\Site 06.vpi"
(drive-on-the-left) at 18:41:26 on Wednesday, 19 January 2022

RUN INFORMATION
****

```
RUN TITLE       : Boherboy Development
LOCATION        : N81
DATE            : 01/05/19
CLIENT          : DurkanHomes/Kelland Homes
ENUMERATOR      : Ronan Kearns
JOB NUMBER      : P170804 - Boherboy, Dublin
STATUS          : Final Version
DESCRIPTION     :
```

MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA

```
MAJOR ROAD (ARM C) --------------------- MAJOR ROAD (ARM A)
                             I
                             I
                             I
                             I
                             I
                             I
                     MINOR ROAD (ARM B)
```

ARM A IS N81 (West)
ARM B IS Boherboy Road
ARM C IS N81 (East)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 8.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 3.00 M.
- VISIBILITY	(VC-B) 90.00 M.
- BLOCKS TRAFFIC (SPACES)	NO (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 120.0 M.
- VISIBILITY TO RIGHT	(VB-A) 120.0 M.
- LANE 1 WIDTH	(WB-C) 3.50 M.
- LANE 2 WIDTH	(WB-A) 3.50 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: Survey AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.45	11.17	7.45
ARM B	15.00	45.00	75.00	3.15	4.73	3.15
ARM C	15.00	45.00	75.00	6.15	9.23	6.15

Demand set: Survey AM

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.017	0.983
		0.0	10.0	586.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.044	0.000	0.956
		11.0	0.0	241.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.467	0.533	0.000
		230.0	262.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Survey AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	3.02	9.15	0.331		0.00	0.49	6.9		0.16
B-A	0.14	5.65	0.024		0.00	0.02	0.4		0.18
C-A	2.89								
C-B	3.29	8.51	0.386		0.00	0.62	8.7		0.19
A-B	0.13								
A-C	7.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	3.61	8.76	0.412		0.49	0.69	9.9		0.19
B-A	0.16	4.94	0.033		0.02	0.03	0.5		0.21
C-A	3.45								
C-B	3.93	8.16	0.481		0.62	0.90	12.9		0.23
A-B	0.15								
A-C	8.78								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	4.42	8.21	0.539		0.69	1.13	15.9		0.26
B-A	0.20	3.98	0.051		0.03	0.05	0.8		0.26
C-A	4.22								
C-B	4.81	7.68	0.626		0.90	1.58	21.9		0.34
A-B	0.18								
A-C	10.75								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	4.42	8.21	0.539		1.13	1.15	17.1		0.26
B-A	0.20	3.97	0.051		0.05	0.05	0.8		0.27
C-A	4.22								
C-B	4.81	7.68	0.626		1.58	1.63	24.1		0.35
A-B	0.18								
A-C	10.75								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	3.61	8.76	0.412		1.15	0.72	11.3		0.20
B-A	0.16	4.92	0.034		0.05	0.04	0.5		0.21
C-A	3.45								
C-B	3.93	8.16	0.481		1.63	0.95	15.2		0.24
A-B	0.15								
A-C	8.78								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	3.02	9.15	0.331		0.72	0.50	7.8		0.16
B-A	0.14	5.62	0.025		0.04	0.03	0.4		0.18
C-A	2.89								
C-B	3.29	8.51	0.386		0.95	0.64	10.1		0.19
A-B	0.13								
A-C	7.35								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.5	
08.30	0.7	*
08.45	1.1	*
09.00	1.1	*
09.15	0.7	*
09.30	0.5	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.0
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.9	*
08.45	1.6	**
09.00	1.6	**
09.15	1.0	*
09.30	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	331.7	221.1	68.9	0.21	68.9	0.21
B-A	15.1	10.1	3.3	0.22	3.3	0.22
C-A	316.6	211.1				
C-B	360.6	240.4	92.9	0.26	92.9	0.26
A-B	13.8	9.2				
A-C	806.6	537.7				
ALL	1844.4	1229.6	165.1	0.09	165.2	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: Survey PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.60	3.90	2.60
ARM B	15.00	45.00	75.00	2.70	4.05	2.70
ARM C	15.00	45.00	75.00	11.02	16.54	11.02

Demand set: Survey PM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
17.00 - 18.30				
	ARM A	0.000	0.043	0.957
		0.0	9.0	199.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.037	0.000	0.963
		8.0	0.0	208.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.566	0.434	0.000
		499.0	383.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Survey PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	2.61	10.42	0.250		0.00	0.33	4.8		0.13
B-A	0.10	5.79	0.017		0.00	0.02	0.3		0.18
C-A	6.26								
C-B	4.81	9.68	0.496		0.00	0.96	13.4		0.20
A-B	0.11								
A-C	2.50								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.12	10.28	0.303		0.33	0.43	6.3		0.14
B-A	0.12	5.11	0.023		0.02	0.02	0.3		0.20
C-A	7.48								
C-B	5.74	9.56	0.600		0.96	1.44	20.4		0.26
A-B	0.13								
A-C	2.98								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	3.82	10.07	0.379		0.43	0.60	8.7		0.16
B-A	0.15	4.18	0.035		0.02	0.04	0.5		0.25
C-A	9.16								
C-B	7.03	9.39	0.748		1.44	2.71	36.3		0.39
A-B	0.17								
A-C	3.65								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	3.82	10.07	0.379		0.60	0.61	9.0		0.16
B-A	0.15	4.15	0.035		0.04	0.04	0.5		0.25
C-A	9.16								
C-B	7.03	9.39	0.748		2.71	2.82	41.7		0.42
A-B	0.17								
A-C	3.65								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.12	10.28	0.303		0.61	0.44	6.8		0.14
B-A	0.12	5.06	0.024		0.04	0.02	0.4		0.20
C-A	7.48								
C-B	5.74	9.56	0.600		2.82	1.56	25.3		0.27
A-B	0.13								
A-C	2.98								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	2.61	10.42	0.250		0.44	0.34	5.2		0.13
B-A	0.10	5.75	0.017		0.02	0.02	0.3		0.18
C-A	6.26								
C-B	4.81	9.68	0.496		1.56	1.01	16.0		0.21
A-B	0.11								
A-C	2.50								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.3	
17.30	0.4	
17.45	0.6	*
18.00	0.6	*
18.15	0.4	
18.30	0.3	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.0	*
17.30	1.4	*
17.45	2.7	***
18.00	2.8	***
18.15	1.6	**
18.30	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	286.3	190.9	40.8	0.14	40.8	0.14
B-A	11.0	7.3	2.3	0.21	2.3	0.21
C-A	686.8	457.9				
C-B	527.2	351.4	153.0	0.29	153.1	0.29
A-B	12.4	8.3				
A-C	273.9	182.6				
ALL	1797.6	1198.4	196.2	0.11	196.2	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Baseline AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.15	12.22	8.15
ARM B	15.00	45.00	75.00	3.50	5.25	3.50
ARM C	15.00	45.00	75.00	6.81	10.22	6.81

Demand set: 2027 Baseline AM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.017	0.983
		0.0	11.0	641.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.043	0.000	0.957
		12.0	0.0	268.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.461	0.539	0.000
		251.0	294.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Baseline AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	3.36	8.96	0.375		0.00	0.59	8.4		0.18
B-A	0.15	5.28	0.029		0.00	0.03	0.4		0.19
C-A	3.15								
C-B	3.69	8.34	0.442		0.00	0.77	10.8		0.21
A-B	0.14								
A-C	8.04								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	4.02	8.53	0.471		0.59	0.87	12.4		0.22
B-A	0.18	4.50	0.040		0.03	0.04	0.6		0.23
C-A	3.76								
C-B	4.40	7.96	0.553		0.77	1.19	16.8		0.28
A-B	0.16								
A-C	9.60								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	4.92	7.92	0.621		0.87	1.55	21.5		0.32
B-A	0.22	3.44	0.064		0.04	0.07	1.0		0.31
C-A	4.61								
C-B	5.39	7.43	0.726		1.19	2.40	31.9		0.46
A-B	0.20								
A-C	11.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	4.92	7.92	0.621		1.55	1.59	23.7		0.33
B-A	0.22	3.41	0.065		0.07	0.07	1.0		0.31
C-A	4.61								
C-B	5.39	7.43	0.726		2.40	2.51	37.0		0.48
A-B	0.20								
A-C	11.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	4.02	8.53	0.471		1.59	0.91	14.6		0.23
B-A	0.18	4.46	0.040		0.07	0.04	0.7		0.23
C-A	3.76								
C-B	4.40	7.96	0.553		2.51	1.29	20.9		0.29
A-B	0.16								
A-C	9.60								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	3.36	8.96	0.375		0.91	0.61	9.6		0.18
B-A	0.15	5.25	0.029		0.04	0.03	0.5		0.20
C-A	3.15								
C-B	3.69	8.34	0.442		1.29	0.81	12.9		0.22
A-B	0.14								
A-C	8.04								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.9	*
08.45	1.6	**
09.00	1.6	**
09.15	0.9	*
09.30	0.6	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.0
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.8	*
08.30	1.2	*
08.45	2.4	**
09.00	2.5	***
09.15	1.3	*
09.30	0.8	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	368.9	245.9	90.0	0.24	90.0	0.24
B-A	16.5	11.0	4.1	0.25	4.1	0.25
C-A	345.5	230.3				
C-B	404.7	269.8	130.3	0.32	130.3	0.32
A-B	15.1	10.1				
A-C	882.3	588.2				
ALL	2033.0	1355.3	224.4	0.11	224.5	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Baseline with Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.15	12.22	8.15
ARM B	15.00	45.00	75.00	4.21	6.32	4.21
ARM C	15.00	45.00	75.00	7.04	10.56	7.04

Demand set: 2027 Baseline with Dev AM

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.017	0.983
		0.0	11.0	641.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.045	0.000	0.955
		15.0	0.0	322.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.446	0.554	0.000
		251.0	312.0	0.0
		(10.0)	(10.0)	(0.0)

(Header: TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S))

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Baseline with Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	4.04	8.94	0.452		0.00	0.80	11.3		0.20
B-A	0.19	5.20	0.036		0.00	0.04	0.5		0.20
C-A	3.15								
C-B	3.91	8.34	0.469		0.00	0.86	12.0		0.22
A-B	0.14								
A-C	8.04								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	4.82	8.51	0.567		0.80	1.26	17.8		0.27
B-A	0.22	4.40	0.051		0.04	0.05	0.8		0.24
C-A	3.76								
C-B	4.67	7.96	0.587		0.86	1.36	19.1		0.30
A-B	0.16								
A-C	9.60								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	5.91	7.88	0.750		1.26	2.68	35.3		0.46
B-A	0.28	3.32	0.083		0.05	0.09	1.3		0.33
C-A	4.61								
C-B	5.73	7.43	0.770		1.36	2.93	38.2		0.52
A-B	0.20								
A-C	11.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	5.91	7.88	0.750		2.68	2.82	41.4		0.50
B-A	0.28	3.28	0.084		0.09	0.09	1.3		0.33
C-A	4.61								
C-B	5.73	7.43	0.770		2.93	3.11	45.6		0.57
A-B	0.20								
A-C	11.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	4.82	8.50	0.567		2.82	1.36	22.3		0.29
B-A	0.22	4.35	0.052		0.09	0.06	0.9		0.24
C-A	3.76								
C-B	4.67	7.96	0.587		3.11	1.49	24.6		0.32
A-B	0.16								
A-C	9.60								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	4.04	8.94	0.452		1.36	0.84	13.4		0.21
B-A	0.19	5.16	0.036		0.06	0.04	0.6		0.20
C-A	3.15								
C-B	3.91	8.34	0.469		1.49	0.91	14.4		0.23
A-B	0.14								
A-C	8.04								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.8	*
08.30	1.3	*
08.45	2.7	***
09.00	2.8	***
09.15	1.4	*
09.30	0.8	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.9	*
08.30	1.4	*
08.45	2.9	***
09.00	3.1	***
09.15	1.5	*
09.30	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	443.2	295.5	141.5	0.32	141.5	0.32
B-A	20.6	13.8	5.4	0.26	5.4	0.26
C-A	345.5	230.3				
C-B	429.4	286.3	153.8	0.36	153.9	0.36
A-B	15.1	10.1				
A-C	882.3	588.2				
ALL	2136.2	1424.1	300.7	0.14	300.8	0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Baseline PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.85	4.27	2.85
ARM B	15.00	45.00	75.00	2.95	4.43	2.95
ARM C	15.00	45.00	75.00	12.07	18.11	12.07

Demand set: 2027 Baseline PM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
17.00 - 18.30				
	ARM A	0.000	0.044	0.956
		0.0	10.0	218.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.034	0.000	0.966
		8.0	0.0	228.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.565	0.435	0.000
		546.0	420.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Baseline PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	2.86	10.36	0.276		0.00	0.38	5.4		0.13
B-A	0.10	5.47	0.018		0.00	0.02	0.3		0.19
C-A	6.85								
C-B	5.27	9.62	0.548		0.00	1.17	16.2		0.22
A-B	0.13								
A-C	2.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.42	10.20	0.335		0.38	0.50	7.2		0.15
B-A	0.12	4.71	0.025		0.02	0.03	0.4		0.22
C-A	8.18								
C-B	6.29	9.49	0.663		1.17	1.86	25.9		0.30
A-B	0.15								
A-C	3.27								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	4.18	9.97	0.420		0.50	0.71	10.2		0.17
B-A	0.15	3.70	0.040		0.03	0.04	0.6		0.28
C-A	10.02								
C-B	7.71	9.30	0.828		1.86	4.04	51.6		0.53
A-B	0.18								
A-C	4.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	4.18	9.97	0.420		0.71	0.72	10.7		0.17
B-A	0.15	3.64	0.040		0.04	0.04	0.6		0.29
C-A	10.02								
C-B	7.71	9.30	0.828		4.04	4.36	63.3		0.60
A-B	0.18								
A-C	4.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.42	10.20	0.335		0.72	0.51	7.9		0.15
B-A	0.12	4.64	0.026		0.04	0.03	0.4		0.22
C-A	8.18								
C-B	6.29	9.49	0.663		4.36	2.08	34.8		0.34
A-B	0.15								
A-C	3.27								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	2.86	10.36	0.276		0.51	0.39	6.0		0.13
B-A	0.10	5.42	0.019		0.03	0.02	0.3		0.19
C-A	6.85								
C-B	5.27	9.62	0.548		2.08	1.25	20.0		0.24
A-B	0.13								
A-C	2.74								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.4	
17.30	0.5	
17.45	0.7	*
18.00	0.7	*
18.15	0.5	*
18.30	0.4	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.2	*
17.30	1.9	**
17.45	4.0	****
18.00	4.4	****
18.15	2.1	**
18.30	1.2	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	313.8	209.2	47.5	0.15	47.5	0.15
B-A	11.0	7.3	2.6	0.23	2.6	0.23
C-A	751.5	501.0				
C-B	578.1	385.4	211.9	0.37	212.0	0.37
A-B	13.8	9.2				
A-C	300.1	200.0				
ALL	1968.3	1312.2	262.0	0.13	262.0	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Baseline with Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.86	4.29	2.86
ARM B	15.00	45.00	75.00	3.15	4.73	3.15
ARM C	15.00	45.00	75.00	12.82	19.24	12.82

Demand set: 2027 Baseline with Dev PM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.048	0.952
		0.0	11.0	218.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.036	0.000	0.964
		9.0	0.0	243.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.532	0.468	0.000
		546.0	480.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Baseline with Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	3.05	10.35	0.295		0.00	0.41	5.9		0.14
B-A	0.11	5.19	0.022		0.00	0.02	0.3		0.20
C-A	6.85								
C-B	6.02	9.62	0.626		0.00	1.60	21.7		0.26
A-B	0.14								
A-C	2.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.64	10.18	0.358		0.41	0.55	8.0		0.15
B-A	0.13	4.37	0.031		0.02	0.03	0.5		0.24
C-A	8.18								
C-B	7.19	9.49	0.758		1.60	2.84	38.2		0.41
A-B	0.16								
A-C	3.27								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	4.46	9.94	0.449		0.55	0.80	11.5		0.18
B-A	0.17	3.27	0.051		0.03	0.05	0.7		0.32
C-A	10.02								
C-B	8.81	9.30	0.947		2.84	8.32	94.5		0.91
A-B	0.20								
A-C	4.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	4.46	9.93	0.449		0.80	0.81	12.0		0.18
B-A	0.17	3.14	0.053		0.05	0.05	0.8		0.34
C-A	10.02								
C-B	8.81	9.30	0.947		8.32	10.33	141.4		1.25
A-B	0.20								
A-C	4.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.64	10.18	0.358		0.81	0.57	8.8		0.15
B-A	0.13	4.16	0.032		0.05	0.03	0.5		0.25
C-A	8.18								
C-B	7.19	9.49	0.758		10.33	3.51	71.4		0.63
A-B	0.16								
A-C	3.27								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	3.05	10.35	0.295		0.57	0.42	6.5		0.14
B-A	0.11	5.11	0.022		0.03	0.02	0.4		0.20
C-A	6.85								
C-B	6.02	9.62	0.626		3.51	1.75	28.7		0.30
A-B	0.14								
A-C	2.74								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.4	
17.30	0.5	*
17.45	0.8	*
18.00	0.8	*
18.15	0.6	*
18.30	0.4	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.1
18.00	0.1
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.6	**
17.30	2.8	***
17.45	8.3	********
18.00	10.3	**********
18.15	3.5	****
18.30	1.8	**

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	334.5	223.0	52.7	0.16	52.7	0.16
B-A	12.4	8.3	3.2	0.26	3.2	0.26
C-A	751.5	501.0				
C-B	660.7	440.5	395.9	0.60	396.0	0.60
A-B	15.1	10.1				
A-C	300.1	200.0				
ALL	2074.3	1382.8	451.8	0.22	452.0	0.22

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Baseline AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.50	12.75	8.50
ARM B	15.00	45.00	75.00	3.65	5.48	3.65
ARM C	15.00	45.00	75.00	7.11	10.67	7.11

Demand set: 2032 Baseline AM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
08.00 - 09.30	ARM A	0.000	0.016	0.984
		0.0	11.0	669.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.045	0.000	0.955
		13.0	0.0	279.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.460	0.540	0.000
		262.0	307.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Baseline AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	3.50	8.86	0.395		0.00	0.64	9.0		0.18
B-A	0.16	5.11	0.032		0.00	0.03	0.5		0.20
C-A	3.29								
C-B	3.85	8.26	0.466		0.00	0.85	11.9		0.22
A-B	0.14								
A-C	8.39								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	4.18	8.41	0.497		0.64	0.96	13.7		0.23
B-A	0.19	4.30	0.045		0.03	0.05	0.7		0.24
C-A	3.93								
C-B	4.60	7.86	0.585		0.85	1.35	18.9		0.30
A-B	0.16								
A-C	10.02								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	5.12	7.77	0.659		0.96	1.81	24.7		0.36
B-A	0.24	3.19	0.075		0.05	0.08	1.1		0.34
C-A	4.81								
C-B	5.63	7.31	0.771		1.35	2.93	38.1		0.53
A-B	0.20								
A-C	12.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	5.12	7.77	0.659		1.81	1.87	27.7		0.38
B-A	0.24	3.15	0.076		0.08	0.08	1.2		0.34
C-A	4.81								
C-B	5.63	7.31	0.771		2.93	3.12	45.6		0.58
A-B	0.20								
A-C	12.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	4.18	8.41	0.497		1.87	1.02	16.3		0.24
B-A	0.19	4.24	0.046		0.08	0.05	0.8		0.25
C-A	3.93								
C-B	4.60	7.86	0.585		3.12	1.48	24.4		0.33
A-B	0.16								
A-C	10.02								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	3.50	8.86	0.395		1.02	0.67	10.5		0.19
B-A	0.16	5.07	0.032		0.05	0.03	0.5		0.20
C-A	3.29								
C-B	3.85	8.26	0.466		1.48	0.90	14.3		0.23
A-B	0.14								
A-C	8.39								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	1.0	*
08.45	1.8	**
09.00	1.9	**
09.15	1.0	*
09.30	0.7	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.0
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.9	*
08.30	1.3	*
08.45	2.9	***
09.00	3.1	***
09.15	1.5	*
09.30	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	384.0	256.0	101.9	0.27	101.9	0.27
B-A	17.9	11.9	4.8	0.27	4.8	0.27
C-A	360.6	240.4				
C-B	422.6	281.7	153.2	0.36	153.3	0.36
A-B	15.1	10.1				
A-C	920.8	613.9				
ALL	2121.1	1414.0	259.9	0.12	260.0	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Baseline with Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.51	12.77	8.51
ARM B	15.00	45.00	75.00	4.35	6.52	4.35
ARM C	15.00	45.00	75.00	7.34	11.01	7.34

Demand set: 2032 Baseline with Dev AM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
08.00 - 09.30				
	ARM A	0.000	0.018	0.982
		0.0	12.0	669.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.043	0.000	0.957
		15.0	0.0	333.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.446	0.554	0.000
		262.0	325.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Baseline with Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	4.18	8.85	0.472		0.00	0.87	12.2		0.21
B-A	0.19	5.03	0.037		0.00	0.04	0.5		0.21
C-A	3.29								
C-B	4.08	8.25	0.494		0.00	0.95	13.1		0.23
A-B	0.15								
A-C	8.39								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	4.99	8.39	0.595		0.87	1.40	19.7		0.29
B-A	0.22	4.19	0.054		0.04	0.06	0.8		0.25
C-A	3.93								
C-B	4.87	7.86	0.620		0.95	1.55	21.5		0.33
A-B	0.18								
A-C	10.02								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	6.11	7.74	0.790		1.40	3.23	41.6		0.54
B-A	0.28	3.06	0.090		0.06	0.10	1.4		0.36
C-A	4.81								
C-B	5.96	7.30	0.817		1.55	3.66	46.2		0.62
A-B	0.22								
A-C	12.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	6.11	7.73	0.790		3.23	3.46	50.5		0.60
B-A	0.28	3.01	0.091		0.10	0.10	1.5		0.37
C-A	4.81								
C-B	5.96	7.30	0.817		3.66	3.98	57.7		0.71
A-B	0.22								
A-C	12.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	4.99	8.39	0.595		3.46	1.54	25.6		0.32
B-A	0.22	4.12	0.055		0.10	0.06	0.9		0.26
C-A	3.93								
C-B	4.87	7.86	0.620		3.98	1.72	29.2		0.37
A-B	0.18								
A-C	10.02								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	4.18	8.85	0.472		1.54	0.92	14.6		0.22
B-A	0.19	4.98	0.038		0.06	0.04	0.6		0.21
C-A	3.29								
C-B	4.08	8.25	0.494		1.72	1.01	16.1		0.25
A-B	0.15								
A-C	8.39								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.9	*
08.30	1.4	*
08.45	3.2	***
09.00	3.5	***
09.15	1.5	**
09.30	0.9	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.9	*
08.30	1.5	**
08.45	3.7	****
09.00	4.0	****
09.15	1.7	**
09.30	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	458.3	305.6	164.1	0.36	164.1	0.36
B-A	20.6	13.8	5.7	0.28	5.7	0.28
C-A	360.6	240.4				
C-B	447.3	298.2	183.8	0.41	183.8	0.41
A-B	16.5	11.0				
A-C	920.8	613.9				
ALL	2224.3	1482.9	353.6	0.16	353.7	0.16

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Baseline PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.96	4.44	2.96
ARM B	15.00	45.00	75.00	3.09	4.63	3.09
ARM C	15.00	45.00	75.00	12.60	18.90	12.60

Demand set: 2032 Baseline PM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.042	0.958
		0.0	10.0	227.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.036	0.000	0.964
		9.0	0.0	238.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.565	0.435	0.000
		570.0	438.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Baseline PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	2.99	10.32	0.289		0.00	0.40	5.8		0.14
B-A	0.11	5.31	0.021		0.00	0.02	0.3		0.19
C-A	7.15								
C-B	5.50	9.60	0.573		0.00	1.29	17.8		0.23
A-B	0.13								
A-C	2.85								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.57	10.15	0.351		0.40	0.53	7.8		0.15
B-A	0.13	4.52	0.030		0.02	0.03	0.4		0.23
C-A	8.54								
C-B	6.56	9.46	0.694		1.29	2.12	29.3		0.33
A-B	0.15								
A-C	3.40								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	4.37	9.91	0.441		0.53	0.77	11.1		0.18
B-A	0.17	3.46	0.048		0.03	0.05	0.7		0.30
C-A	10.46								
C-B	8.04	9.26	0.868		2.12	5.03	62.3		0.63
A-B	0.18								
A-C	4.17								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	4.37	9.90	0.441		0.77	0.78	11.7		0.18
B-A	0.17	3.39	0.049		0.05	0.05	0.8		0.31
C-A	10.46								
C-B	8.04	9.26	0.868		5.03	5.59	80.3		0.75
A-B	0.18								
A-C	4.17								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.57	10.15	0.351		0.78	0.55	8.5		0.15
B-A	0.13	4.42	0.031		0.05	0.03	0.5		0.23
C-A	8.54								
C-B	6.56	9.46	0.694		5.59	2.43	41.9		0.40
A-B	0.15								
A-C	3.40								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	2.99	10.32	0.289		0.55	0.41	6.4		0.14
B-A	0.11	5.25	0.022		0.03	0.02	0.3		0.19
C-A	7.15								
C-B	5.50	9.60	0.573		2.43	1.39	22.3		0.25
A-B	0.13								
A-C	2.85								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.4	
17.30	0.5	*
17.45	0.8	*
18.00	0.8	*
18.15	0.5	*
18.30	0.4	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.1
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.3	*
17.30	2.1	**
17.45	5.0	*****
18.00	5.6	******
18.15	2.4	**
18.30	1.4	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	327.6	218.4	51.2	0.16	51.3	0.16
B-A	12.4	8.3	3.0	0.25	3.0	0.25
C-A	784.6	523.0				
C-B	602.9	401.9	253.9	0.42	254.0	0.42
A-B	13.8	9.2				
A-C	312.4	208.3				
ALL	2053.6	1369.1	308.2	0.15	308.3	0.15

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Baseline with Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.99	4.48	2.99
ARM B	15.00	45.00	75.00	3.28	4.91	3.28
ARM C	15.00	45.00	75.00	13.35	20.03	13.35

Demand set: 2032 Baseline with Dev PM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
17.00 - 18.30				
	ARM A	0.000	0.050	0.950
		0.0	12.0	227.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.034	0.000	0.966
		9.0	0.0	253.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.534	0.466	0.000
		570.0	498.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Baseline with Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	3.17	10.31	0.308		0.00	0.44	6.3		0.14
B-A	0.11	5.03	0.022		0.00	0.02	0.3		0.20
C-A	7.15								
C-B	6.25	9.59	0.652		0.00	1.77	23.8		0.28
A-B	0.15								
A-C	2.85								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.79	10.14	0.374		0.44	0.59	8.5		0.16
B-A	0.13	4.18	0.032		0.02	0.03	0.5		0.25
C-A	8.54								
C-B	7.46	9.45	0.790		1.77	3.31	43.8		0.46
A-B	0.18								
A-C	3.40								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	4.64	9.89	0.470		0.59	0.87	12.4		0.19
B-A	0.17	3.02	0.055		0.03	0.06	0.8		0.35
C-A	10.46								
C-B	9.14	9.26	0.987		3.31	10.94	117.8		1.10
A-B	0.22								
A-C	4.17								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	4.64	9.87	0.470		0.87	0.88	13.1		0.19
B-A	0.17	2.84	0.058		0.06	0.06	0.9		0.37
C-A	10.46								
C-B	9.14	9.26	0.987		10.94	14.80	194.9		1.67
A-B	0.22								
A-C	4.17								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.79	10.13	0.374		0.88	0.61	9.5		0.16
B-A	0.13	3.86	0.035		0.06	0.04	0.6		0.27
C-A	8.54								
C-B	7.46	9.45	0.790		14.80	4.41	107.4		0.94
A-B	0.18								
A-C	3.40								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	3.17	10.31	0.308		0.61	0.45	7.0		0.14
B-A	0.11	4.92	0.023		0.04	0.02	0.4		0.21
C-A	7.15								
C-B	6.25	9.59	0.652		4.41	1.97	33.2		0.33
A-B	0.15								
A-C	2.85								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.4	
17.30	0.6	*
17.45	0.9	*
18.00	0.9	*
18.15	0.6	*
18.30	0.5	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.1
18.00	0.1
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.8	**
17.30	3.3	***
17.45	10.9	***********
18.00	14.8	***************
18.15	4.4	****
18.30	2.0	**

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	348.2	232.2	56.8	0.16	56.8	0.16
B-A	12.4	8.3	3.4	0.28	3.4	0.28
C-A	784.6	523.0				
C-B	685.5	457.0	520.9	0.76	521.1	0.76
A-B	16.5	11.0				
A-C	312.4	208.3				
ALL	2159.6	1439.7	581.1	0.27	581.3	0.27

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Baseline AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.77	13.16	8.77
ARM B	15.00	45.00	75.00	3.75	5.63	3.75
ARM C	15.00	45.00	75.00	7.32	10.99	7.32

Demand set: 2042 Baseline AM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
08.00 - 09.30				
	ARM A	0.000	0.016	0.984
		0.0	11.0	691.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.043	0.000	0.957
		13.0	0.0	287.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.462	0.538	0.000
		271.0	315.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR DEMAND SET 2042 Baseline AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	3.60	8.79	0.410		0.00	0.68	9.6		0.19
B-A	0.16	4.98	0.033		0.00	0.03	0.5		0.21
C-A	3.40								
C-B	3.95	8.19	0.483		0.00	0.91	12.6		0.23
A-B	0.14								
A-C	8.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	4.30	8.32	0.517		0.68	1.04	14.7		0.25
B-A	0.19	4.15	0.047		0.03	0.05	0.7		0.25
C-A	4.06								
C-B	4.72	7.78	0.607		0.91	1.47	20.5		0.32
A-B	0.16								
A-C	10.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	5.27	7.66	0.688		1.04	2.04	27.5		0.40
B-A	0.24	3.00	0.079		0.05	0.08	1.2		0.36
C-A	4.97								
C-B	5.78	7.21	0.802		1.47	3.39	43.2		0.60
A-B	0.20								
A-C	12.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	5.27	7.65	0.688		2.04	2.12	31.3		0.42
B-A	0.24	2.95	0.081		0.08	0.09	1.3		0.37
C-A	4.97								
C-B	5.78	7.21	0.802		3.39	3.66	53.2		0.67
A-B	0.20								
A-C	12.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	4.30	8.32	0.517		2.12	1.11	17.8		0.26
B-A	0.19	4.08	0.048		0.09	0.05	0.8		0.26
C-A	4.06								
C-B	4.72	7.78	0.607		3.66	1.62	27.3		0.36
A-B	0.16								
A-C	10.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	3.60	8.79	0.410		1.11	0.71	11.2		0.19
B-A	0.16	4.95	0.033		0.05	0.03	0.5		0.21
C-A	3.40								
C-B	3.95	8.19	0.483		1.62	0.96	15.3		0.24
A-B	0.14								
A-C	8.67								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.7	*
08.30	1.0	*
08.45	2.0	**
09.00	2.1	**
09.15	1.1	*
09.30	0.7	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.9	*
08.30	1.5	*
08.45	3.4	***
09.00	3.7	****
09.15	1.6	**
09.30	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	395.0	263.4	112.1	0.28	112.1	0.28
B-A	17.9	11.9	5.0	0.28	5.0	0.28
C-A	373.0	248.7				
C-B	433.6	289.0	172.0	0.40	172.1	0.40
A-B	15.1	10.1				
A-C	951.1	634.1				
ALL	2185.8	1457.2	289.1	0.13	289.2	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Baseline with Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.79	13.18	8.79
ARM B	15.00	45.00	75.00	4.30	6.45	4.30
ARM C	15.00	45.00	75.00	7.51	11.27	7.51

Demand set: 2042 Baseline with Dev AM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.017	0.983
		0.0	12.0	691.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.035	0.000	0.965
		12.0	0.0	332.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.451	0.549	0.000
		271.0	330.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Baseline with Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	4.17	8.79	0.474		0.00	0.88	12.2		0.21
B-A	0.15	4.92	0.031		0.00	0.03	0.4		0.21
C-A	3.40								
C-B	4.14	8.19	0.506		0.00	0.99	13.7		0.24
A-B	0.15								
A-C	8.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	4.97	8.33	0.597		0.88	1.42	19.9		0.29
B-A	0.18	4.06	0.044		0.03	0.05	0.7		0.26
C-A	4.06								
C-B	4.94	7.78	0.636		0.99	1.65	22.8		0.34
A-B	0.18								
A-C	10.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	6.09	7.66	0.795		1.42	3.31	42.4		0.55
B-A	0.22	2.89	0.076		0.05	0.08	1.1		0.37
C-A	4.97								
C-B	6.06	7.21	0.840		1.65	4.12	51.1		0.69
A-B	0.22								
A-C	12.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	6.09	7.66	0.796		3.31	3.56	51.8		0.62
B-A	0.22	2.83	0.078		0.08	0.08	1.2		0.38
C-A	4.97								
C-B	6.06	7.21	0.840		4.12	4.55	65.6		0.80
A-B	0.22								
A-C	12.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	4.97	8.32	0.598		3.56	1.56	26.0		0.32
B-A	0.18	3.97	0.045		0.08	0.05	0.8		0.26
C-A	4.06								
C-B	4.94	7.78	0.636		4.55	1.85	32.1		0.40
A-B	0.18								
A-C	10.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	4.17	8.79	0.474		1.56	0.92	14.7		0.22
B-A	0.15	4.87	0.031		0.05	0.03	0.5		0.21
C-A	3.40								
C-B	4.14	8.19	0.506		1.85	1.06	16.9		0.25
A-B	0.15								
A-C	8.67								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.9	*
08.30	1.4	*
08.45	3.3	***
09.00	3.6	****
09.15	1.6	**
09.30	0.9	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.0
09.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.0	*
08.30	1.6	**
08.45	4.1	****
09.00	4.6	*****
09.15	1.9	**
09.30	1.1	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	457.0	304.6	167.1	0.37	167.2	0.37
B-A	16.5	11.0	4.7	0.29	4.7	0.29
C-A	373.0	248.7				
C-B	454.2	302.8	202.2	0.45	202.2	0.45
A-B	16.5	11.0				
A-C	951.1	634.1				
ALL	2268.4	1512.2	374.0	0.16	374.1	0.16

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Baseline PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.08	4.61	3.08
ARM B	15.00	45.00	75.00	3.19	4.78	3.19
ARM C	15.00	45.00	75.00	13.01	19.52	13.01

Demand set: 2042 Baseline PM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)		
17.00 - 18.30				
	ARM A	0.000	0.045	0.955
		0.0	11.0	235.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.035	0.000	0.965
		9.0	0.0	246.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.566	0.434	0.000
		589.0	452.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Baseline PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	3.09	10.29	0.300		0.00	0.42	6.1		0.14
B-A	0.11	5.18	0.022		0.00	0.02	0.3		0.20
C-A	7.39								
C-B	5.67	9.57	0.593		0.00	1.40	19.1		0.25
A-B	0.14								
A-C	2.95								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.69	10.12	0.364		0.42	0.56	8.2		0.15
B-A	0.13	4.36	0.031		0.02	0.03	0.5		0.24
C-A	8.82								
C-B	6.77	9.42	0.719		1.40	2.37	32.3		0.36
A-B	0.16								
A-C	3.52								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	4.51	9.86	0.458		0.56	0.83	11.9		0.19
B-A	0.17	3.26	0.051		0.03	0.05	0.7		0.32
C-A	10.81								
C-B	8.29	9.23	0.899		2.37	6.08	72.9		0.73
A-B	0.20								
A-C	4.31								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	4.51	9.85	0.458		0.83	0.84	12.5		0.19
B-A	0.17	3.17	0.052		0.05	0.05	0.8		0.33
C-A	10.81								
C-B	8.29	9.23	0.899		6.08	6.99	99.0		0.91
A-B	0.20								
A-C	4.31								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.69	10.11	0.364		0.84	0.58	9.1		0.16
B-A	0.13	4.23	0.032		0.05	0.03	0.5		0.24
C-A	8.82								
C-B	6.77	9.42	0.719		6.99	2.77	50.0		0.46
A-B	0.16								
A-C	3.52								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	3.09	10.29	0.300		0.58	0.43	6.7		0.14
B-A	0.11	5.11	0.022		0.03	0.02	0.4		0.20
C-A	7.39								
C-B	5.67	9.57	0.593		2.77	1.51	24.5		0.27
A-B	0.14								
A-C	2.95								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.4	
17.30	0.6	*
17.45	0.8	*
18.00	0.8	*
18.15	0.6	*
18.30	0.4	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.1
18.00	0.1
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.4	*
17.30	2.4	**
17.45	6.1	******
18.00	7.0	*******
18.15	2.8	***
18.30	1.5	**

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-C	338.6	225.7	54.4	0.16	54.4	0.16
B-A	12.4	8.3	3.2	0.26	3.2	0.26
C-A	810.7	540.5				
C-B	622.1	414.8	297.9	0.48	298.0	0.48
A-B	15.1	10.1				
A-C	323.5	215.6				
ALL	2122.4	1415.0	355.5	0.17	355.6	0.17

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.50	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
607.03	0.26	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
680.59	0.24	0.24

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Baseline with Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.09	4.63	3.09
ARM B	15.00	45.00	75.00	3.34	5.01	3.34
ARM C	15.00	45.00	75.00	13.61	20.42	13.61

Demand set: 2042 Baseline with Dev PM

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.049	0.951
		0.0	12.0	235.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.034	0.000	0.966
		9.0	0.0	258.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.541	0.459	0.000
		589.0	500.0	0.0
		(10.0)	(10.0)	(0.0)

(Column header group: TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S))

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Baseline with Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	3.24	10.29	0.315		0.00	0.45	6.5		0.14
B-A	0.11	4.96	0.023		0.00	0.02	0.3		0.21
C-A	7.39								
C-B	6.27	9.57	0.656		0.00	1.80	24.2		0.28
A-B	0.15								
A-C	2.95								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.87	10.11	0.382		0.45	0.61	8.8		0.16
B-A	0.13	4.09	0.033		0.02	0.03	0.5		0.25
C-A	8.82								
C-B	7.49	9.42	0.795		1.80	3.40	44.9		0.47
A-B	0.18								
A-C	3.52								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	4.73	9.84	0.481		0.61	0.91	13.0		0.19
B-A	0.17	2.91	0.057		0.03	0.06	0.8		0.36
C-A	10.81								
C-B	9.18	9.22	0.995		3.40	11.52	122.8		1.15
A-B	0.22								
A-C	4.31								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	4.73	9.83	0.482		0.91	0.92	13.7		0.20
B-A	0.17	2.72	0.061		0.06	0.06	0.9		0.39
C-A	10.81								
C-B	9.18	9.22	0.995		11.52	15.87	207.2		1.78
A-B	0.22								
A-C	4.31								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	3.87	10.10	0.383		0.92	0.63	9.8		0.16
B-A	0.13	3.75	0.036		0.06	0.04	0.6		0.28
C-A	8.82								
C-B	7.49	9.42	0.795		15.87	4.62	117.6		1.03
A-B	0.18								
A-C	3.52								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	3.24	10.29	0.315		0.63	0.47	7.2		0.14
B-A	0.11	4.84	0.023		0.04	0.02	0.4		0.21
C-A	7.39								
C-B	6.27	9.57	0.656		4.62	2.01	34.1		0.34
A-B	0.15								
A-C	2.95								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.5	
17.30	0.6	*
17.45	0.9	*
18.00	0.9	*
18.15	0.6	*
18.30	0.5	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.1
18.00	0.1
18.15	0.0
18.30	0.0

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.8	**
17.30	3.4	***
17.45	11.5	************
18.00	15.9	****************
18.15	4.6	*****
18.30	2.0	**

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	355.1	236.7	59.0	0.17	59.0	0.17
B-A	12.4	8.3	3.6	0.29	3.6	0.29
C-A	810.7	540.5				
C-B	688.2	458.8	550.8	0.80	551.0	0.80
A-B	16.5	11.0				
A-C	323.5	215.6				
ALL	2206.4	1470.9	613.4	0.28	613.6	0.28

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

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Printed at 18:43:49 on 19/01/2022]

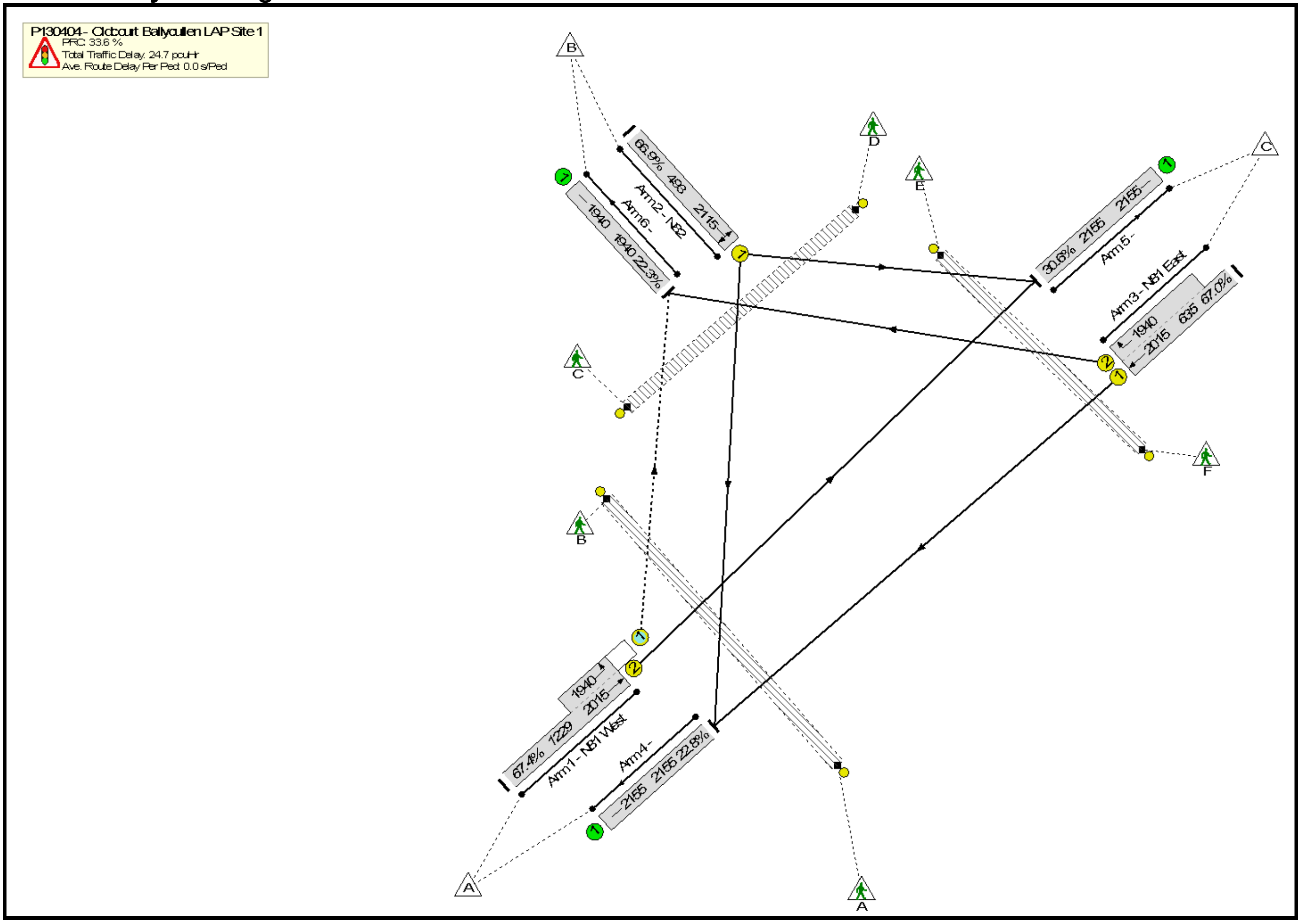
Site 3 – N81/N82 Signal Controlled Junction

Basic Results Summary
Basic Results Summary

User and Project Details

Project:	**P200107 - BOHERBOY, Boherboy Road Upgrade Site 07**
Title:	
Location:	Site 07
File name:	Site 07 - AM_Rev1.lsg3x
Author:	Ronan Kearns
Company:	Pinnacle
Address:	67a Patrick Street, Dun Laoghaire, Co. Dublin
Notes:	

Scenario 1: 'Survey' (FG1: 'Survey', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



Basic Results Summary

Network Results

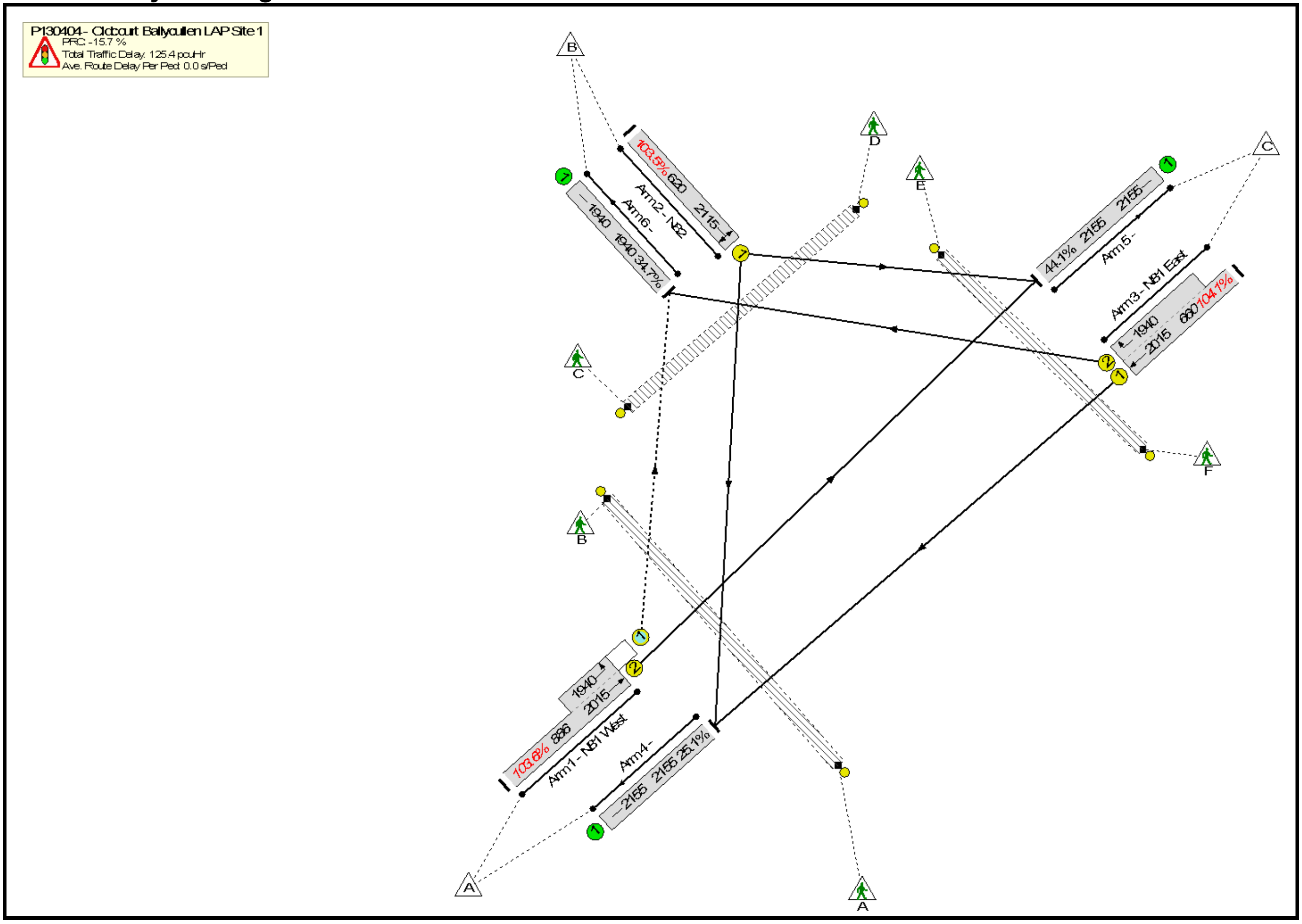
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.4%**	**0**	**318**	**0**	**24.7**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.4%**	**0**	**318**	**0**	**24.7**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	179:291	-	828	2015:1940	1229	67.4%	0	318	0	8.6	37.4	43.0
2/1	N82 Right Left	U	E		1	69	-	330	2115	493	66.9%	-	-	-	10.6	115.3	25.9
3/1+3/2	N81 East Ahead Right	U	A B		1:2	220:29	-	426	2015:1940	635	67.0%	-	-	-	5.0	42.5	9.0
4/1		U	-		-	-	-	491	2155	2155	22.8%	-	-	-	0.1	1.1	0.1
5/1		U	-		-	-	-	660	2155	2155	30.6%	-	-	-	0.2	1.2	0.2
6/1		U	-		-	-	-	433	1940	1940	22.3%	-	-	-	0.1	1.2	0.1
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 33.6 Total Delay for Signalled Lanes (pcuHr): 24.20 Cycle Time (s): 300
PRC Over All Lanes (%): 33.6 Total Delay Over All Lanes(pcuHr): 24.71

Basic Results Summary

Scenario 2: '2027 Base' (FG2: '2027 Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

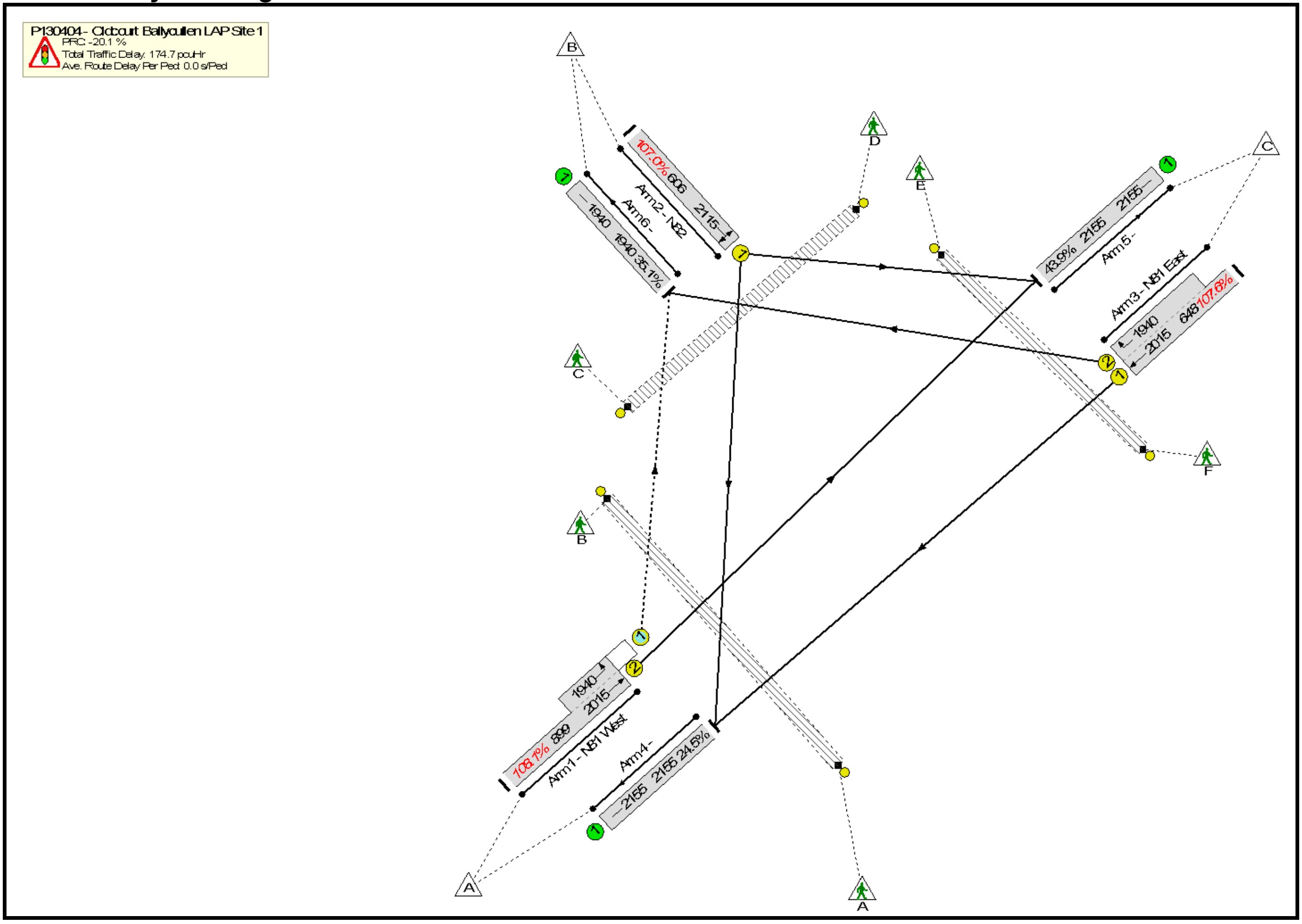
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**104.1%**	**31**	**315**	**0**	**125.4**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**104.1%**	**31**	**315**	**0**	**125.4**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	127:291	-	918	2015:1940	886	103.6%	31	315	0	49.4	193.8	136.1
2/1	N82 Right Left	U	E		1	87	-	642	2115	620	103.5%	-	-	-	41.9	235.1	75.7
3/1+3/2	N81 East Ahead Right	U	A B		1:2	202:63	-	687	2015:1940	660	104.1%	-	-	-	33.2	173.9	52.9
4/1		U	-		-	-	-	562	2155	2155	25.1%	-	-	-	0.2	1.1	0.2
5/1		U	-		-	-	-	985	2155	2155	44.1%	-	-	-	0.4	1.5	0.4
6/1		U	-		-	-	-	700	1940	1940	34.7%	-	-	-	0.3	1.4	0.3
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -15.7 Total Delay for Signalled Lanes (pcuHr): 124.53 Cycle Time (s): 300
PRC Over All Lanes (%): -15.7 Total Delay Over All Lanes(pcuHr): 125.36

Basic Results Summary

Scenario 3: '2027 Base with Dev' (FG3: '2027 Base with Dev', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

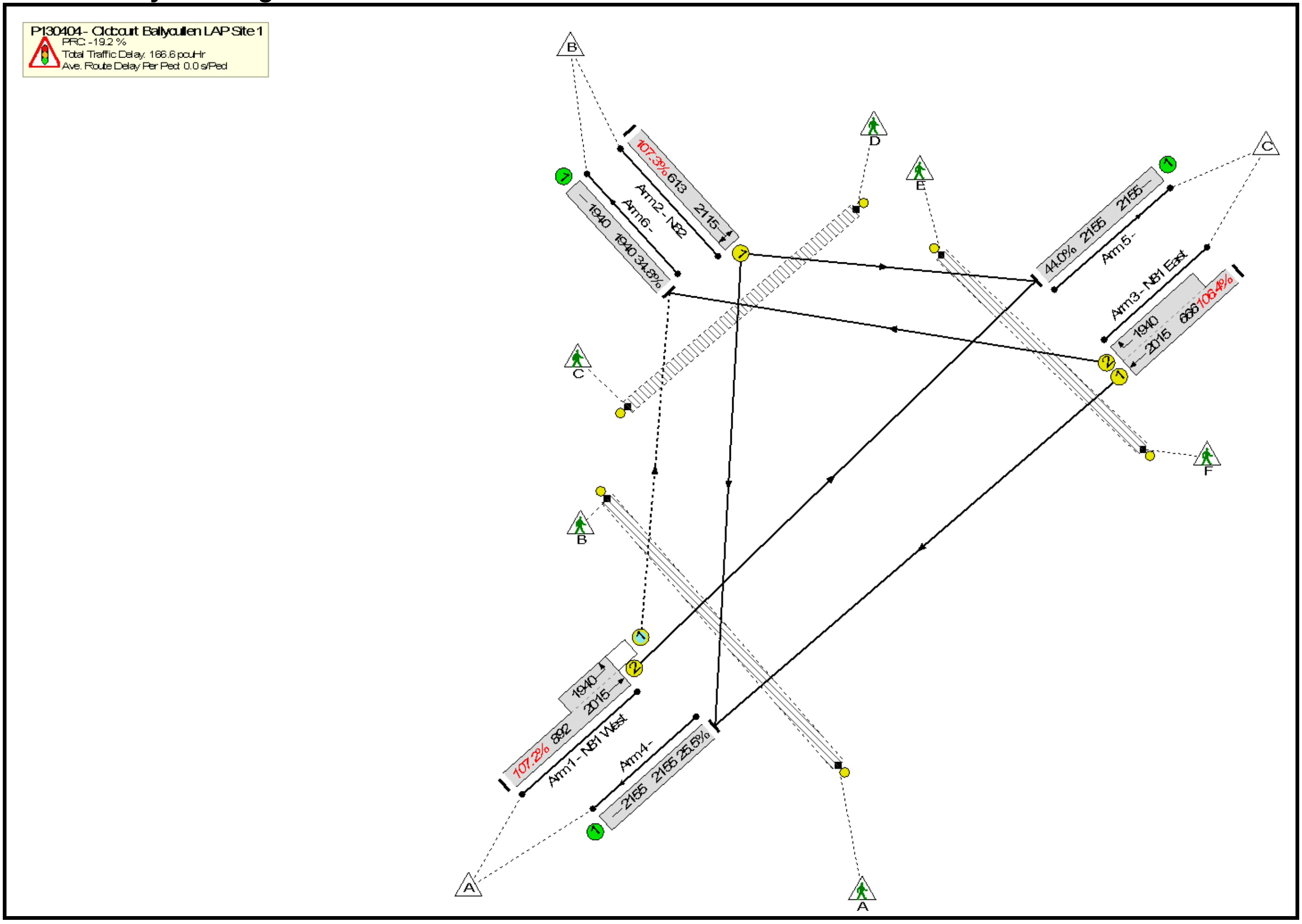
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.1%**	**31**	**320**	**0**	**174.7**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.1%**	**31**	**320**	**0**	**174.7**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	129:291	-	972	2015:1940	899	108.1%	31	320	0	73.2	271.0	162.6
2/1	N82 Right Left	U	E		1	85	-	649	2115	606	107.0%	-	-	-	54.2	300.5	88.0
3/1+3/2	N81 East Ahead Right	U	A B		1:2	204:63	-	698	2015:1940	648	107.6%	-	-	-	46.5	239.9	67.1
4/1		U	-		-	-	-	566	2155	2155	24.5%	-	-	-	0.2	1.1	0.2
5/1		U	-		-	-	-	1018	2155	2155	43.9%	-	-	-	0.4	1.5	0.4
6/1		U	-		-	-	-	735	1940	1940	35.1%	-	-	-	0.3	1.4	0.3
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -20.1 Total Delay for Signalled Lanes (pcuHr): 173.85 Cycle Time (s): 300
PRC Over All Lanes (%): -20.1 Total Delay Over All Lanes(pcuHr): 174.67

Basic Results Summary

Scenario 4: '2032 Base ' (FG4: '2032 Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

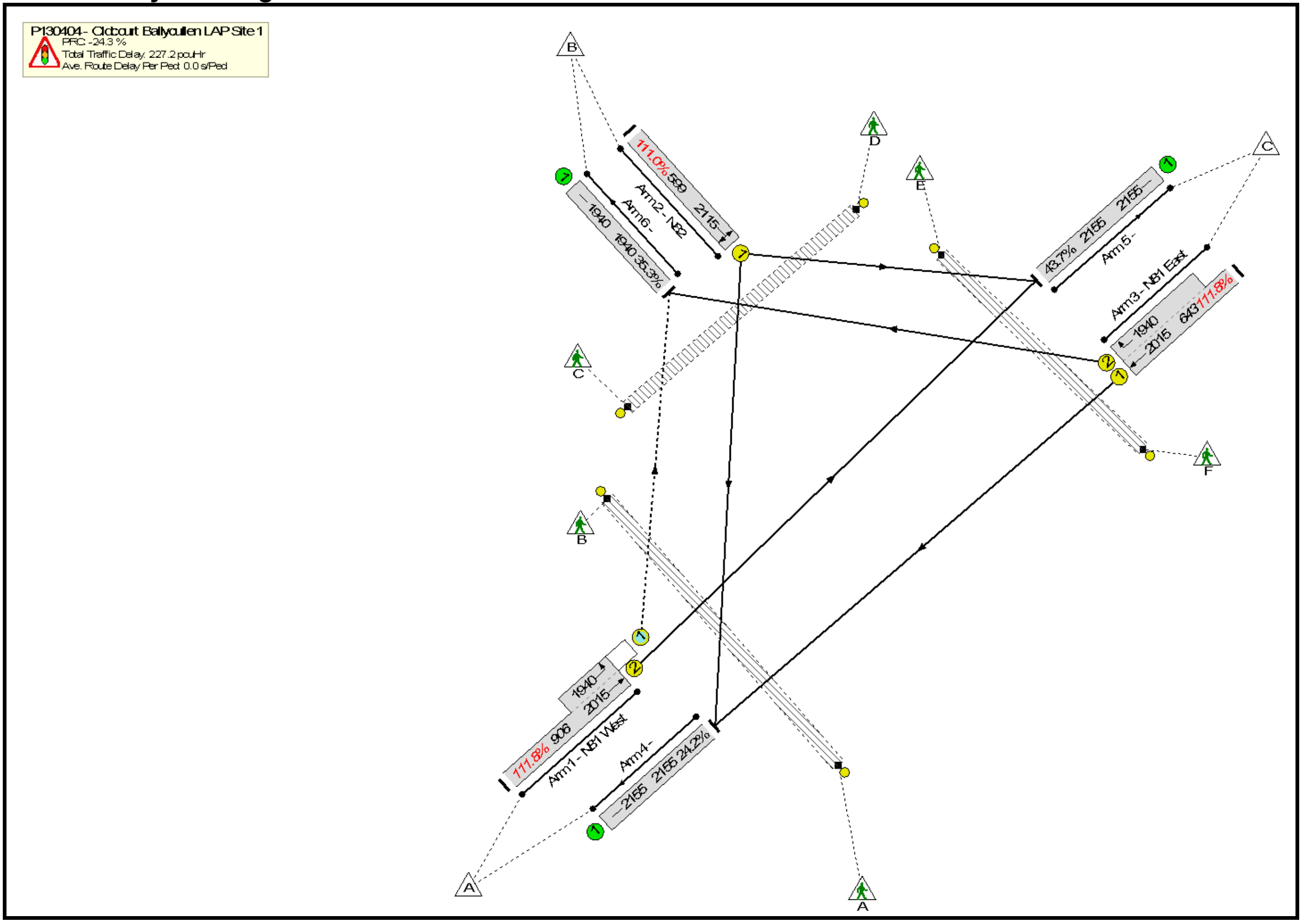
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**107.3%**	**31**	**317**	**0**	**166.6**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**107.3%**	**31**	**317**	**0**	**166.6**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	128:291	-	957	2015:1940	892	107.2%	31	317	0	68.1	256.0	156.9
2/1	N82 Right Left	U	E		1	86	-	658	2115	613	107.3%	-	-	-	55.6	304.1	89.9
3/1+3/2	N81 East Ahead Right	U	A B		1:2	203:63	-	708	2015:1940	666	106.4%	-	-	-	42.1	214.3	62.8
4/1		U	-		-	-	-	586	2155	2155	25.5%	-	-	-	0.2	1.1	0.2
5/1		U	-		-	-	-	1016	2155	2155	44.0%	-	-	-	0.4	1.5	0.4
6/1		U	-		-	-	-	721	1940	1940	34.8%	-	-	-	0.3	1.4	0.3
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -19.2 Total Delay for Signalled Lanes (pcuHr): 165.79 Cycle Time (s): 300
PRC Over All Lanes (%): -19.2 Total Delay Over All Lanes(pcuHr): 166.62

Basic Results Summary

Scenario 5: '2032 Base with Dev' (FG5: '2032 Bsae with Dev', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

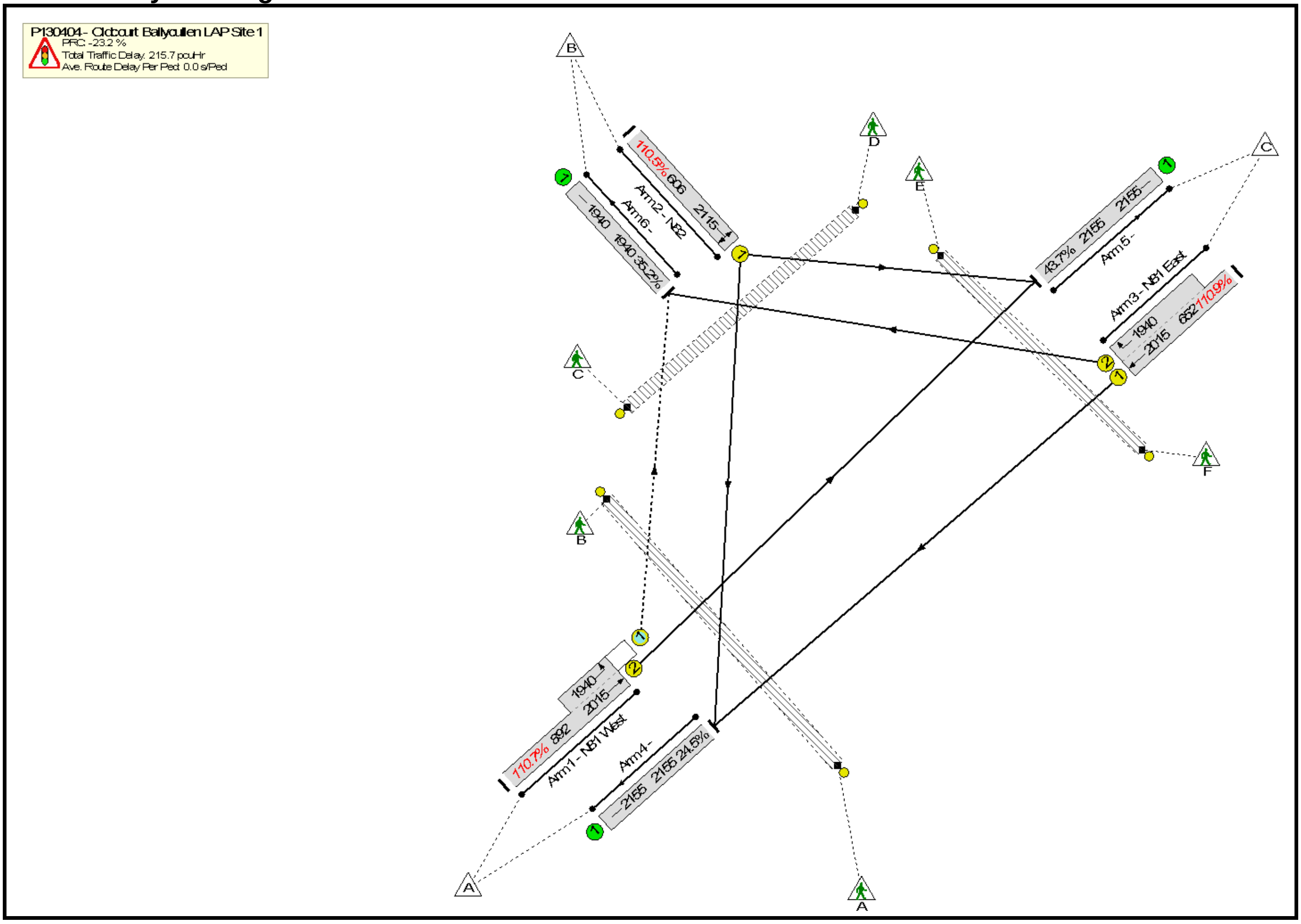
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**111.8%**	**30**	**322**	**0**	**227.2**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**111.8%**	**30**	**322**	**0**	**227.2**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	130:291	-	1012	2015:1940	906	111.8%	30	322	0	94.0	334.3	185.3
2/1	N82 Right Left	U	E		1	84	-	665	2115	599	111.0%	-	-	-	68.9	372.9	103.1
3/1+3/2	N81 East Ahead Right	U	A B		1:2	205:63	-	719	2015:1940	643	111.8%	-	-	-	63.5	318.1	104.1
4/1		U	-		-	-	-	581	2155	2155	24.2%	-	-	-	0.2	1.1	0.2
5/1		U	-		-	-	-	1050	2155	2155	43.7%	-	-	-	0.4	1.5	0.4
6/1		U	-		-	-	-	765	1940	1940	35.3%	-	-	-	0.3	1.4	0.3
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -24.3 Total Delay for Signalled Lanes (pcuHr): 226.38 Cycle Time (s): 300
PRC Over All Lanes (%): -24.3 Total Delay Over All Lanes(pcuHr): 227.20

Basic Results Summary

Scenario 6: '2042 Base' (FG6: '2042 Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



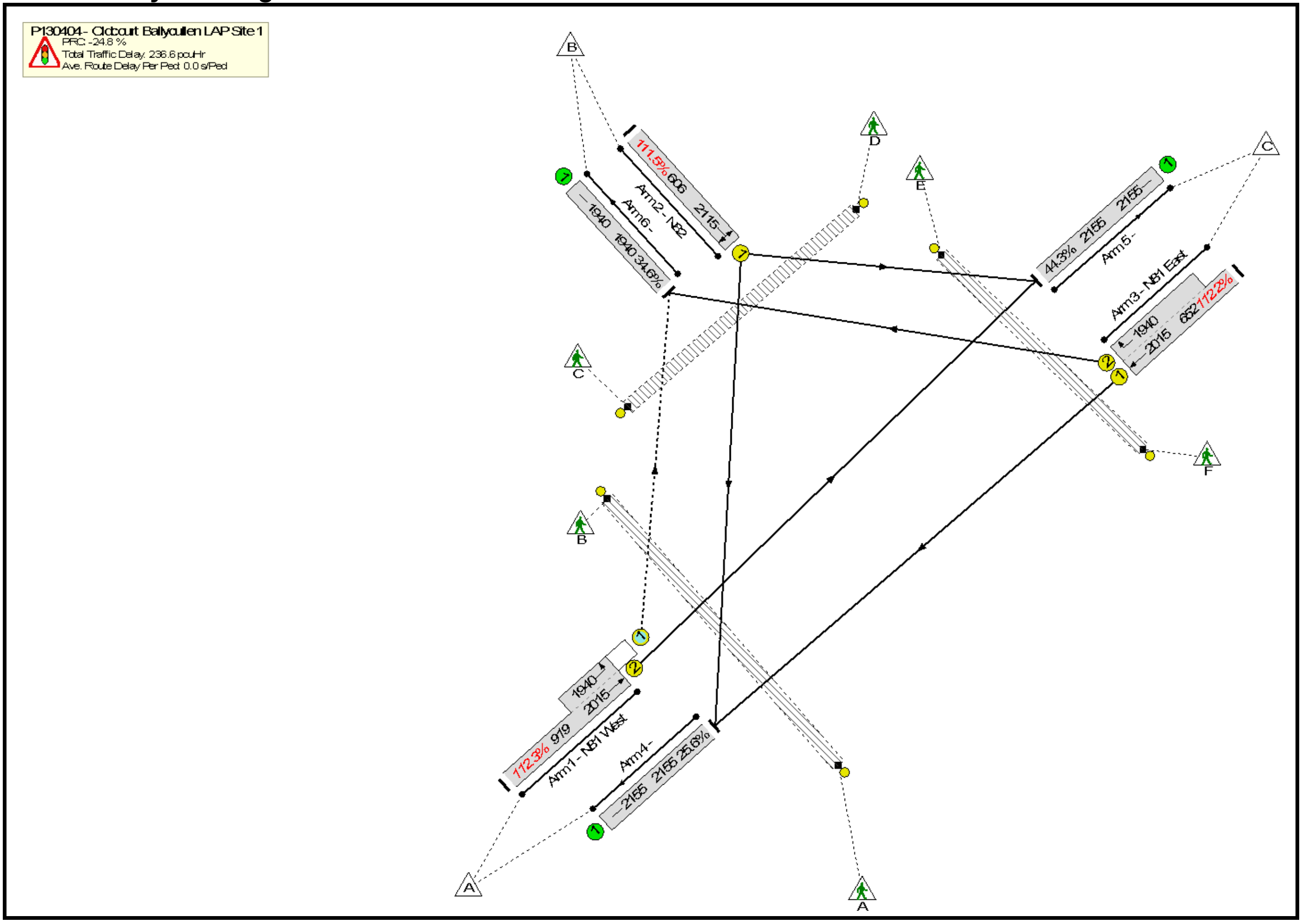
Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**110.9%**	**31**	**317**	**0**	**215.7**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**110.9%**	**31**	**317**	**0**	**215.7**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	128:291	-	988	2015:1940	892	110.7%	31	317	0	87.1	317.4	177.0
2/1	N82 Right Left	U	E		1	85	-	670	2115	606	110.5%	-	-	-	67.7	363.7	102.3
3/1+3/2	N81 East Ahead Right	U	A B		1:2	204:64	-	723	2015:1940	652	110.9%	-	-	-	60.1	299.1	81.7
4/1		U	-		-	-	-	584	2155	2155	24.5%	-	-	-	0.2	1.1	0.2
5/1		U	-		-	-	-	1041	2155	2155	43.7%	-	-	-	0.4	1.5	0.4
6/1		U	-		-	-	-	756	1940	1940	35.2%	-	-	-	0.3	1.4	0.3
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -23.2 Total Delay for Signalled Lanes (pcuHr): 214.87 Cycle Time (s): 300
PRC Over All Lanes (%): -23.2 Total Delay Over All Lanes(pcuHr): 215.69

Basic Results Summary
Scenario 7: '2042 Base with Dev' (FG7: '2042 Bsae with Dev', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**112.3%**	**31**	**327**	**0**	**236.6**	**-**	**-**
P130404 - Oldcourt Ballycullen LAP Site 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**112.3%**	**31**	**327**	**0**	**236.6**	**-**	**-**
1/2+1/1	N81 West Ahead Left	U+O	C D		1	132:291	-	1032	2015:1940	919	112.3%	31	327	0	98.3	342.9	191.2
2/1	N82 Right Left	U	E		1	85	-	676	2115	606	111.5%	-	-	-	71.7	381.6	106.6
3/1+3/2	N81 East Ahead Right	U	A B		1:2	204:60	-	732	2015:1940	652	112.2%	-	-	-	65.8	323.9	107.2
4/1		U	-		-	-	-	618	2155	2155	25.6%	-	-	-	0.2	1.1	0.2
5/1		U	-		-	-	-	1068	2155	2155	44.3%	-	-	-	0.4	1.5	0.4
6/1		U	-		-	-	-	754	1940	1940	34.6%	-	-	-	0.3	1.4	0.3
Ped Link: P1	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	7	-	0	-	467	0.0%	-	-	-	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -24.8 Total Delay for Signalled Lanes (pcuHr): 235.82 Cycle Time (s): 300
PRC Over All Lanes (%): -24.8 Total Delay Over All Lanes(pcuHr): 236.65

Site 4 – N82/Corbally Heath Roundabout

ARCADY 7

Version: 7.1.1.245 [9th June 2011]

File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 08\Site 08.arc7
Report generation date: 19/01/2022 18:48:15

Summary of roundabout performance

	AM				PM			
	Queue (PCU)	Delay (min)	RFC	LOS	Queue (PCU)	Delay (min)	RFC	LOS
	Existing - 2027 Base							
Arm 1	0.40	0.07	0.28	A	0.61	0.08	0.38	A
Arm 2	0.73	0.08	0.42	A	1.59	0.13	0.62	A
Arm 3	0.21	0.07	0.17	A	0.09	0.07	0.09	A
Arm 4	0.90	0.08	0.48	A	1.35	0.11	0.58	A
	Existing - 2027 Base + Dev							
Arm 1	0.39	0.06	0.28	A	0.85	0.12	0.46	A
Arm 2	0.73	0.08	0.42	A	1.59	0.13	0.62	A
Arm 3	0.17	0.07	0.14	A	0.10	0.07	0.09	A
Arm 4	0.88	0.08	0.47	A	2.17	0.18	0.69	B
	Existing - 2032 Base							
Arm 1	0.42	0.07	0.30	A	0.67	0.09	0.40	A
Arm 2	0.79	0.08	0.44	A	1.81	0.14	0.65	A
Arm 3	0.23	0.07	0.19	A	0.10	0.07	0.09	A
Arm 4	0.98	0.09	0.50	A	1.52	0.12	0.61	A
	Existing - 2032 Base + Dev							
Arm 1	0.42	0.07	0.30	A	0.67	0.09	0.40	A
Arm 2	0.79	0.08	0.44	A	1.81	0.14	0.65	A
Arm 3	0.23	0.07	0.19	A	0.10	0.07	0.09	A
Arm 4	0.98	0.09	0.50	A	1.52	0.12	0.61	A
	Existing - 2042 Base							
Arm 1	0.45	0.07	0.31	A	0.72	0.09	0.42	A
Arm 2	0.85	0.09	0.46	A	2.02	0.15	0.67	A
Arm 3	0.25	0.07	0.20	A	0.11	0.07	0.10	A
Arm 4	1.06	0.09	0.52	A	1.68	0.13	0.63	A
	Existing - 2042 Base + Dev							

Arm 1	0.50	0.08	0.33	A	0.74	0.10	0.43	A
Arm 2	0.96	0.10	0.49	A	2.22	0.17	0.69	A
Arm 3	0.36	0.08	0.27	A	0.13	0.08	0.12	A
Arm 4	1.55	0.11	0.61	A	1.87	0.14	0.65	A
	Existing - Survey							
Arm 1	0.34	0.06	0.25	A	0.56	0.09	0.36	A
Arm 2	0.59	0.07	0.37	A	1.29	0.12	0.56	A
Arm 3	0.18	0.06	0.15	A	0.75	0.11	0.43	A
Arm 4	0.67	0.07	0.40	A	1.46	0.12	0.60	A

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

Survey - AM runs from 08:00:00 to 09:30:00
2027 Base - AM runs from 08:00:00 to 09:30:00
2027 Base + Dev - AM runs from 08:00:00 to 09:30:00
2032 Base - AM runs from 08:00:00 to 09:30:00
2032 Base + Dev - AM runs from 08:00:00 to 09:30:00
2042 Base - AM runs from 08:00:00 to 09:30:00
2042 Base + Dev - AM runs from 08:00:00 to 09:30:00
Survey - PM runs from 17:00:00 to 18:30:00
2027 Base - PM runs from 17:00:00 to 18:30:00
2027 Base + Dev - PM runs from 17:00:00 to 18:30:00
2032 Base - PM runs from 17:00:00 to 18:30:00
2032 Base + Dev - PM runs from 17:00:00 to 18:30:00
2042 Base - PM runs from 17:00:00 to 18:30:00
2042 Base + Dev - PM runs from 17:00:00 to 18:30:00

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	13/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	GPS\ronan.kearns
Description	

Analysis Options

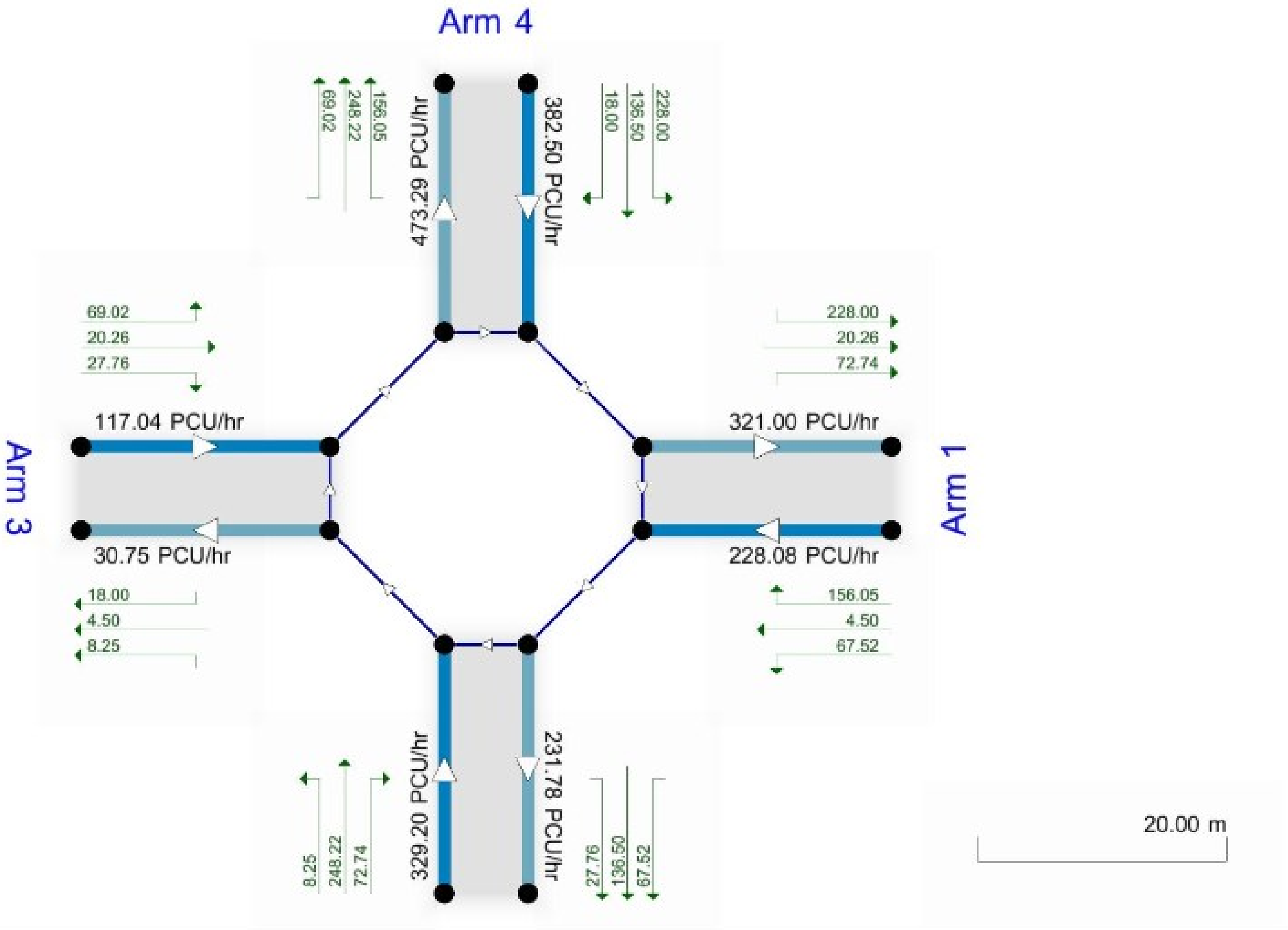
RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	min	-Min	perMin



[redacted]

The junction diagram reflects the last run of ARCADY.

A1 - Existing - D1 - Survey, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type

Survey, AM	Survey	AM			Yes			08:00	09:30	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1-1	(untitled)	1,2,3,4	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
1	Magna Drive	
2	N82-S	
3	Corbally Access	
4	N82 - N	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.75	6.00	6.44	29.05	36.30	27.31	
2	3.75	6.22	5.01	21.74	40.19	26.23	
3	4.00	6.10	6.25	40.00	36.00	27.19	
4	3.75	6.04	6.81	29.64	36.21	27.27	

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		((calculated))	((calculated))	0.615	1493.956
2		((calculated))	((calculated))	0.597	1450.842
3		((calculated))	((calculated))	0.634	1570.559
4		((calculated))	((calculated))	0.619	1507.790

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)	PHF
1	ONE HOUR	Yes	304.00	100.000	N/A
2	ONE HOUR	Yes	439.00	100.000	N/A
3	ONE HOUR	Yes	156.00	100.000	N/A
4	ONE HOUR	Yes	510.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (PCU/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (PCU/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	1	228.87	228.87	N/A	N/A
1	2	330.50	330.50	N/A	N/A
1	3	117.44	117.44	N/A	N/A
1	4	383.95	383.95	N/A	N/A
2	1	273.29	273.29	N/A	N/A
2	2	394.65	394.65	N/A	N/A
2	3	140.24	140.24	N/A	N/A
2	4	458.48	458.48	N/A	N/A
3	1	334.71	334.71	N/A	N/A
3	2	483.35	483.35	N/A	N/A
3	3	171.76	171.76	N/A	N/A
3	4	561.52	561.52	N/A	N/A
4	1	334.71	334.71	N/A	N/A
4	2	483.35	483.35	N/A	N/A
4	3	171.76	171.76	N/A	N/A
4	4	561.52	561.52	N/A	N/A
5	1	273.29	273.29	N/A	N/A
5	2	394.65	394.65	N/A	N/A
5	3	140.24	140.24	N/A	N/A
5	4	458.48	458.48	N/A	N/A
6	1	228.87	228.87	N/A	N/A
6	2	330.50	330.50	N/A	N/A
6	3	117.44	117.44	N/A	N/A
6	4	383.95	383.95	N/A	N/A

Turning Proportions

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Roundabout 1-1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	90.000	6.000	208.000
	2	97.000	0.000	11.000	331.000
	3	27.000	37.000	0.000	92.000
	4	304.000	182.000	24.000	0.000

Turning Proportions (PCU) - Roundabout 1-1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.30	0.02	0.68
	2	0.22	0.00	0.03	0.75
	3	0.17	0.24	0.00	0.59
	4	0.60	0.36	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1-1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1-1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (PCU)	Max LOS	Total Demand (PCU/hr)	Total Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Queueing Total Delay (PCU-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
1	0.25	0.06	0.34	A	278.96	418.43	23.47	0.06	0.26	23.47	0.06	0.615	1493.956
2	0.37	0.07	0.59	A	402.83	604.25	40.10	0.07	0.45	40.10	0.07	0.597	1450.842
3	0.15	0.06	0.18	A	143.15	214.72	12.33	0.06	0.14	12.33	0.06	0.634	1570.559
4	0.40	0.07	0.67	A	467.98	701.98	45.09	0.06	0.50	45.09	0.06	0.619	1507.790

Main Results

Main results: (08:00-08:15)

Arm	Demand (PCU/hr)	Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)

1	228.87	57.22	228.08	321.00	182.26	0.00	1381.81	1109.87	0.166	0.00	0.20
2	330.50	82.63	329.20	231.78	178.55	0.00	1344.27	949.38	0.246	0.00	0.32
3	117.44	29.36	117.04	30.75	477.01	0.00	1268.02	501.88	0.093	0.00	0.10
4	383.95	95.99	382.50	473.29	120.76	0.00	1433.10	1250.69	0.268	0.00	0.36

Main results: (08:15-08:30)

Arm	Demand (PCU/hr)	Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)
1	273.29	68.32	273.08	384.39	218.25	0.00	1359.67	1109.86	0.201	0.20	0.25
2	394.65	98.66	394.26	277.54	213.79	0.00	1323.24	949.38	0.298	0.32	0.42
3	140.24	35.06	140.12	36.82	571.22	0.00	1208.27	501.88	0.116	0.10	0.13
4	458.48	114.62	458.04	566.75	144.60	0.00	1418.35	1250.69	0.323	0.36	0.47

Main results: (08:30-08:45)

Arm	Demand (PCU/hr)	Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)
1	334.71	83.68	334.37	470.60	267.19	0.00	1329.55	1109.86	0.252	0.25	0.33
2	483.35	120.84	482.67	339.80	261.77	0.00	1294.60	949.38	0.373	0.42	0.59
3	171.76	42.94	171.57	45.08	699.36	0.00	1127.00	501.88	0.152	0.13	0.18
4	561.52	140.38	560.76	693.89	177.04	0.00	1398.29	1250.69	0.402	0.47	0.67

Main results: (08:45-09:00)

Arm	Demand (PCU/hr)	Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)
1	334.71	83.68	334.71	471.23	267.54	0.00	1329.33	1109.86	0.252	0.33	0.34
2	483.35	120.84	483.34	340.21	262.04	0.00	1294.44	949.38	0.373	0.59	0.59
3	171.76	42.94	171.76	45.14	700.24	0.00	1126.44	501.88	0.152	0.18	0.18
4	561.52	140.38	561.51	694.73	177.26	0.00	1398.15	1250.69	0.402	0.67	0.67

Main results: (09:00-09:15)

Arm	Demand (PCU/hr)	Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)
1	273.29	68.32	273.62	385.39	218.80	0.00	1359.33	1109.86	0.201	0.34	0.25
2	394.65	98.66	395.32	278.20	214.23	0.00	1322.98	949.38	0.298	0.59	0.43
3	140.24	35.06	140.43	36.92	572.62	0.00	1207.38	501.88	0.116	0.18	0.13
4	458.48	114.62	459.23	568.10	144.96	0.00	1418.13	1250.69	0.323	0.67	0.48

Main results: (09:15-09:30)

Arm	Demand (PCU/hr)	Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)
1	228.87	57.22	229.08	322.60	183.15	0.00	1381.26	1109.87	0.166	0.25	0.20
2	330.50	82.63	330.90	232.88	179.35	0.00	1343.79	949.38	0.246	0.43	0.33
3	117.44	29.36	117.56	30.90	479.35	0.00	1266.54	501.88	0.093	0.13	0.10
4	383.95	95.99	384.41	475.57	121.35	0.00	1432.74	1250.69	0.268	0.48	0.37

Queueing Delay Results

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (min)	Unsignalised Level Of Service	Signalised Level Of Service
1	2.91	0.19	0.052	A	A
2	4.76	0.32	0.059	A	A
3	1.50	0.10	0.052	A	A

4	5.34	0.36	0.057	A	A

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (min)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.71	0.25	0.055	A	A
2	6.23	0.42	0.065	A	A
3	1.94	0.13	0.056	A	A
4	7.00	0.47	0.062	A	A

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (min)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.94	0.33	0.060	A	A
2	8.68	0.58	0.074	A	A
3	2.64	0.18	0.063	A	A
4	9.78	0.65	0.072	A	A

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (min)	Unsignalised Level Of Service	Signalised Level Of Service
1	5.03	0.34	0.060	A	A
2	8.89	0.59	0.074	A	A
3	2.69	0.18	0.063	A	A
4	10.01	0.67	0.072	A	A

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (min)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.85	0.26	0.055	A	A
2	6.54	0.44	0.065	A	A
3	2.01	0.13	0.056	A	A
4	7.35	0.49	0.063	A	A

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (min)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.03	0.20	0.052	A	A
2	5.00	0.33	0.059	A	A
3	1.56	0.10	0.052	A	A
4	5.61	0.37	0.057	A	A

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
1	3.75	6.00	6.44	29.05	36.30	27.31		0.615	1493.956
2	3.75	6.22	5.01	21.74	40.19	26.23		0.597	1450.842
3	4.00	6.10	6.25	40.00	36.00	27.19		0.634	1570.559
4	3.75	6.04	6.81	29.64	36.21	27.27		0.619	1507.790

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (PCU)	End Queue (PCU)	Queueing Total Delay (PCU-min)	Geometric Total Delay (PCU-min)	Average Delay Per Arriving Vehicle (min)
1	1	228.87	1381.81	0.166	0.00	0.00	0.20	2.91	(0.02)	0.052
1	2	330.50	1344.27	0.246	0.00	0.00	0.32	4.76	(0.02)	0.059
1	3	117.44	1268.02	0.093	0.00	0.00	0.10	1.50	(0.02)	0.052
1	4	383.95	1433.10	0.268	0.00	0.00	0.36	5.34	(0.02)	0.057
2	1	273.29	1359.67	0.201	0.00	0.20	0.25	3.71	(0.02)	0.055
2	2	394.65	1323.24	0.298	0.00	0.32	0.42	6.23	(0.02)	0.065
2	3	140.24	1208.27	0.116	0.00	0.10	0.13	1.94	(0.02)	0.056
2	4	458.48	1418.35	0.323	0.00	0.36	0.47	7.00	(0.02)	0.062
3	1	334.71	1329.55	0.252	0.00	0.25	0.33	4.94	(0.02)	0.060
3	2	483.35	1294.60	0.373	0.00	0.42	0.59	8.68	(0.02)	0.074
3	3	171.76	1127.00	0.152	0.00	0.13	0.18	2.64	(0.02)	0.063
3	4	561.52	1398.29	0.402	0.00	0.47	0.67	9.78	(0.02)	0.072
4	1	334.71	1329.33	0.252	0.00	0.33	0.34	5.03	(0.02)	0.060
4	2	483.35	1294.44	0.373	0.00	0.59	0.59	8.89	(0.02)	0.074
4	3	171.76	1126.44	0.152	0.00	0.18	0.18	2.69	(0.02)	0.063
4	4	561.52	1398.15	0.402	0.00	0.67	0.67	10.01	(0.02)	0.072
5	1	273.29	1359.33	0.201	0.00	0.34	0.25	3.85	(0.02)	0.055
5	2	394.65	1322.98	0.298	0.00	0.59	0.43	6.54	(0.02)	0.065
5	3	140.24	1207.38	0.116	0.00	0.18	0.13	2.01	(0.02)	0.056
5	4	458.48	1418.13	0.323	0.00	0.67	0.48	7.35	(0.02)	0.063
6	1	228.87	1381.26	0.166	0.00	0.25	0.20	3.03	(0.02)	0.052
6	2	330.50	1343.79	0.246	0.00	0.43	0.33	5.00	(0.02)	0.059
6	3	117.44	1266.54	0.093	0.00	0.13	0.10	1.56	(0.02)	0.052
6	4	383.95	1432.74	0.268	0.00	0.48	0.37	5.61	(0.02)	0.057

Site 5 – N82/ Fortunestown Land Signal Controlled Junction

OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009

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File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 01\Site 01 - PM.osc
Report generation date: 19/01/2022 18:52:01

Summary

File Description

Title	(untitled)
Date	13/05/2021
Location	
Driving Side	Left
Identifier	
Client	
Jobnumber	
Enumerator	ronan.kearns [SIMON-HP]
Status	(new file)
Description	

Run Options

Run Evaluation Set	No
Evaluation Only	No
Optimise Critical Cycle TimeOnly	No
Use Horizontal Queues	Yes
Favour Continuous Green	No
Phase Timings Fuzziness (s)	0.5
Integer Phase Timings	Yes
Phase Snapping Distance (s)	0
Automatic Lane Turning Props	Yes
Automatic Vehicle Props	No

Geometry

Arms

Arm	Name	Exit Width (m)	Approach Speed (kph)	Exit Speed (kph)	Speed Limit (kph)	Stagger Distance (m)
1	Citywest Drive	50.0	10	10	80	0
2	N82 - S	50.0	10	10	80	0
3	Fortunestown Lane - W	50.0	10	10	80	0
4	N82 - N	50.0	10	10	80	0

Traffic Streams

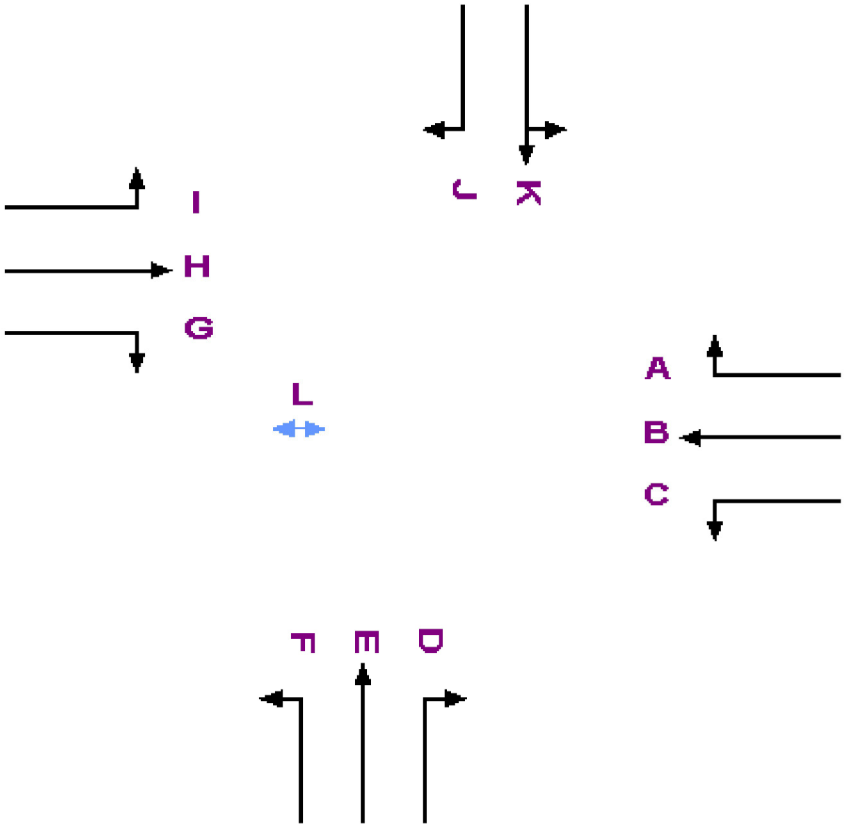
Arm	Traffic Stream	Type	Name	Sat Flow (PCU/hr)	Estimate Sat Flow	Sat Flow 2 (PCU/hr)	Green Phase	Arrow Phase
1	**1**	Traffic		1830	Yes	0	C	-
1	**2**	Traffic		2105	Yes	0	B	-
1	**3**	Traffic		1830	Yes	0	A	-
2	**1**	Traffic		1830	Yes	0	F	-
2	**2**	Traffic		2105	Yes	0	E	-
2	**3**	Traffic		1830	Yes	0	D	-
3	**1**	Traffic		1830	Yes	0	I	-
3	**2**	Traffic		2105	Yes	0	H	-
3	**3**	Traffic		1830	Yes	0	G	-
4	**1**	Traffic		2032	Yes	0	K	-
4	**2**	Traffic		1830	Yes	0	J	-
(Ped)	**1**	Pedestrian		10000	Yes	0	L	-

Arm	Traffic Stream	Relative Start Displacement (s)	Relative End Displacement (s)	Max Deg Sat (%)	Delay Weight (%)	Max Queue (PCU)	Initial Queue (PCU)	Average PCU Per Veh	Heavy Vehicles Percentage
1	**1**	0.0	0.0	90	100	0	0.0	1.10	0
1	**2**	0.0	0.0	90	100	0	0.0	1.10	0
1	**3**	0.0	0.0	90	100	0	0.0	1.10	0
2	**1**	0.0	0.0	90	100	0	0.0	1.10	0
2	**2**	0.0	0.0	90	100	0	0.0	1.10	0
2	**3**	0.0	0.0	90	100	0	0.0	1.10	0
3	**1**	0.0	0.0	90	100	0	0.0	1.10	0
3	**2**	0.0	0.0	90	100	0	0.0	1.10	0
3	**3**	0.0	0.0	90	100	0	0.0	1.10	0
4	**1**	0.0	0.0	90	100	0	0.0	1.10	0
4	**2**	0.0	0.0	90	100	0	0.0	1.10	0
(Ped)	**1**	0.0	0.0	90	100	0	0.0	-	0

Lanes

Arm	Traffic Stream	Lane	Name	Nearside Dest Arm	Straight Dest Arm	Offside Dest Arm	Proportion That Turn	Turning Radius (m)	IsNearside Lane	Width (m)	Gradient (%)	Short Lane Storage (PCU)
1	**1**	**1**		2			1.00	10	No	3.50	0.0	0
1	**2**	**1**			3		0.00	10	No	3.50	0.0	0
1	**3**	**1**				4	1.00	10	No	3.50	0.0	0
2	**1**	**1**		3			1.00	10	No	3.50	0.0	0
2	**2**	**1**			4		0.00	10	No	3.50	0.0	0
2	**3**	**1**				1	1.00	10	No	3.50	0.0	0
3	**1**	**1**		4			1.00	10	No	3.50	0.0	0
3	**2**	**1**			1		0.00	10	No	3.50	0.0	0
3	**3**	**1**				2	1.00	10	No	3.50	0.0	0
4	**1**	**1**		1	2		0.24	10	No	3.50	0.0	0
4	**2**	**1**				3	1.00	10	No	3.50	0.0	0

Junction Diagram



Signals

Signals

Max Cycle Time (s)	300
Fixed Cycle Time (s)	0
Evaluation Cycle Time (s)	0
Start Displacement (s)	1.4
End Displacement (s)	2.9

Phases

Phase	Name	Type	Associated Phase	Phase Min Green (s)	Phase Max Green (s)	Double Green
A	(Name)	Traffic	-	7.0	0.0	No
B	(Name)	Traffic	-	7.0	0.0	No
C	(Name)	Traffic	-	7.0	0.0	No
D	(Name)	Traffic	-	7.0	0.0	No
E	(Name)	Traffic	-	7.0	0.0	No
F	(Name)	Traffic	-	7.0	0.0	No
G	(Name)	Traffic	-	7.0	0.0	No
H	(Name)	Traffic	-	7.0	0.0	No
I	(Name)	Traffic	-	7.0	0.0	No
J	(Name)	Traffic	-	7.0	0.0	No
K	(Name)	Traffic	-	7.0	0.0	No
L	(Name)	Pedestrian	-	7.0	0.0	No

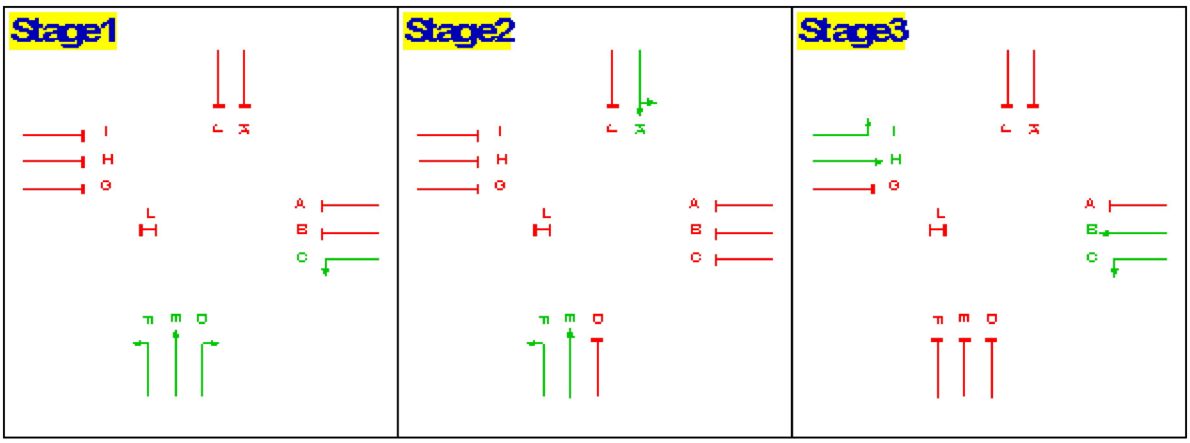
Intergreen Matrix

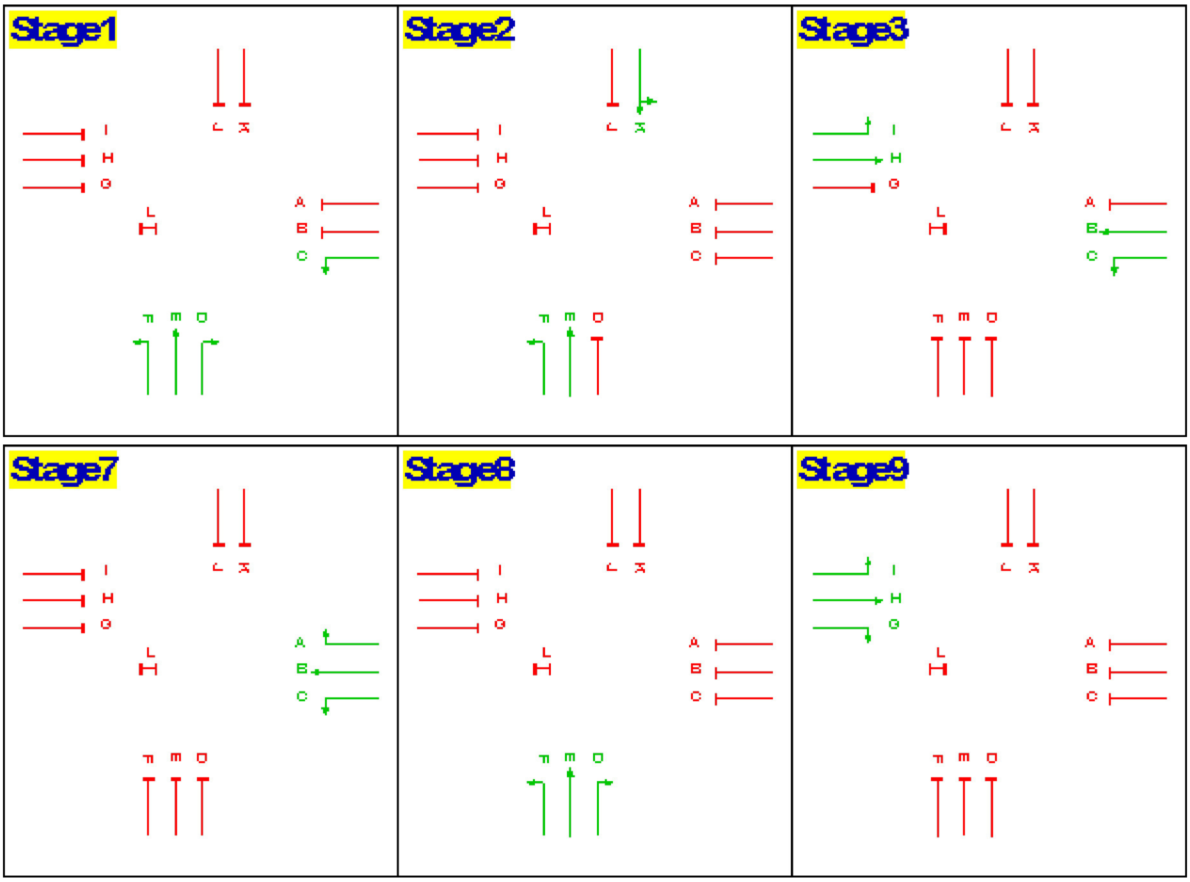
		To											
		A	B	C	D	E	F	G	H	I	J	K	L
From	A	-			6	6			6	6	6	6	6
	B		-		6	6	6	6			6	6	6
	C			-				6			6	6	6
	D	6	6		-			6	6	6	6	6	6
	E	6	6			-		6	6	6	6		6
	F		6				-				6		6
	G		6	6	6	6		-			6	6	6
	H	6			6	6			-		6	6	6
	I	6			6	6				-			6
	J	6	6	6	6	6	6	6	6		-		6
	K	6	6	6	6			6	6			-	6
	L	6	6	6	6	6	6	6	6	6	6	6	-

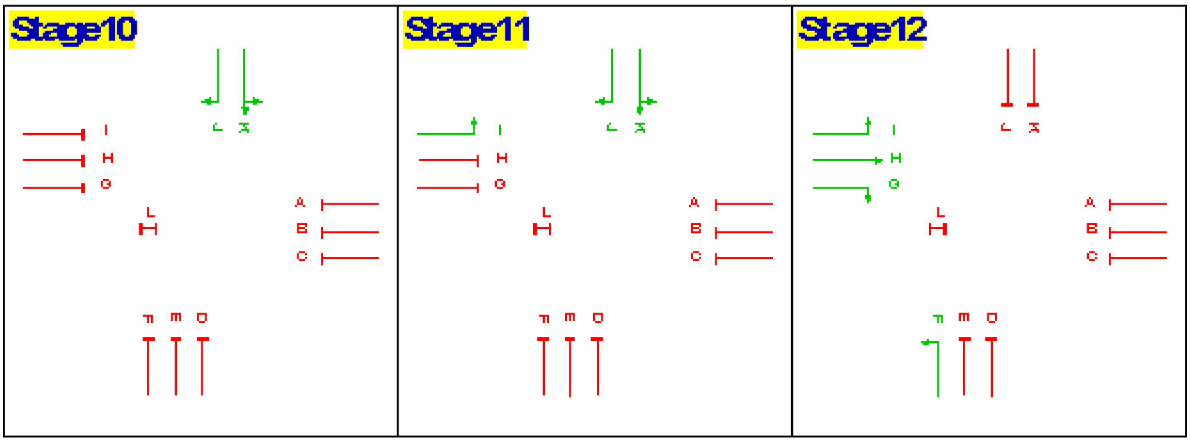
Stages

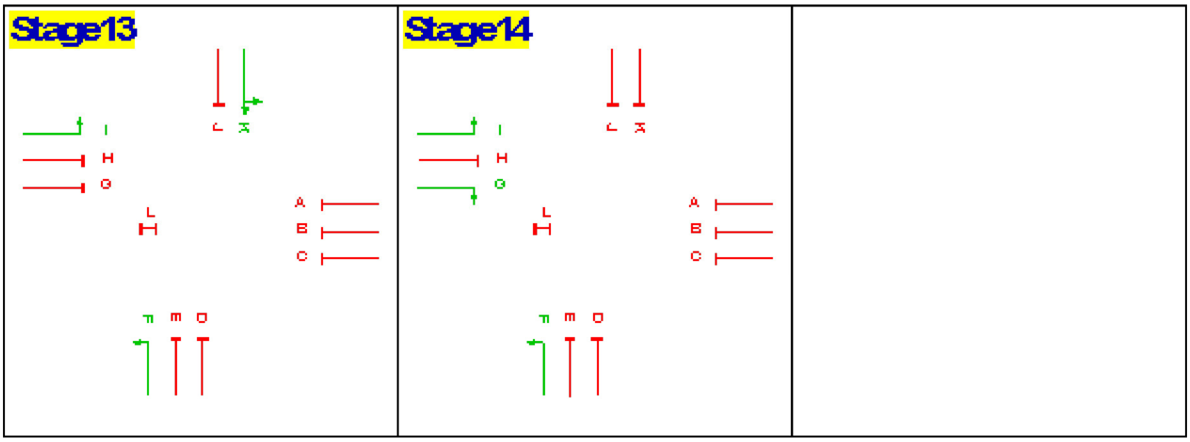
Stage	Stage Min Green (s)	Phases In This Stage	Use To Generate Sequences
1	-1	C,D,E,F	Yes
2	-1	E,F,K	Yes
3	-1	B,C,H,I	Yes
5	-1	A,F,G	Yes
6	-1	L	Yes
7	-1	A,B,C	Yes
8	-1	D,E,F	Yes
9	-1	G,H,I	Yes
10	-1	J,K	Yes
11	-1	I,J,K	Yes
12	-1	F,G,H,I	Yes
13	-1	F,I,K	Yes
14	-1	F,G,I	Yes
16	-1	B,C,I	Yes
17	-1	A,C,F	Yes
18	-1	A,G	Yes
19	-1	A,F	Yes

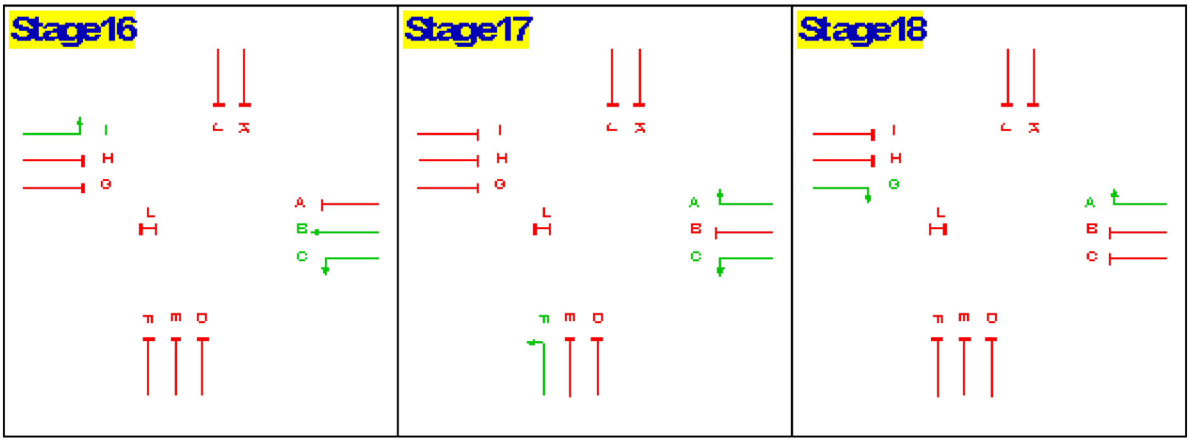
Stage Diagrams




Stage1
Stage2
Stage3
Stage7
Stage8
Stage9


Stage10
Stage11
Stage12





Sequences

Sequence	Name	Stages In This Sequence
1		2,8,6,3,10
2		2,10,3,6,8

Constraints

(No constraints)

Traffic

Note: *Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

Configuration

Traffic Scaling Factor	1.00
Time Period (min)	90
Time Segment Length (min)	15
Signal Optimiser Flows	Average
PCUs per Heavy Vehicle	2.00

Demand Sets

Name	Selected	Time Start	Time End	Profile Type	Use Relationship	Relationship
Survey	No	17:00	18:30	ODTAB	No	D1
2027 Base	No	17:00	18:30	ODTAB	No	D1
2027 Base + Dev	No	17:00	18:30	ODTAB	No	D1
2032 Base	No	17:00	18:30	ODTAB	No	D1
2032 Base + Dev	No	17:00	18:30	ODTAB	No	D1
2042 Bsae	No	17:00	18:30	ODTAB	No	D1
2042 Bsae + Dev	Yes	17:00	18:30	ODTAB	No	D1

Demand Set7 - 2042 Bsae + Dev

ODTAB Data (PCU/hr during central 60 min peak period)

		To			
		Arm 1	**Arm 2**	**Arm 3**	**Arm 4**
From	**Arm 1**	-	190	378	117
	Arm 2	181	-	178	305
	Arm 3	474	288	-	131
	Arm 4	108	413	102	-

Average pedestrian flow on each pedestrian stream (if applicable): 10 ped/hr

Traffic flows (PCU/hr)

Arm	Traffic Stream	Phase	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15	18:15-18:30
1 - Citywest Drive	1	C	144	172	210	210	172	144
1 - Citywest Drive	2	B	283	337	413	413	337	283
1 - Citywest Drive	3	A	87	104	128	128	104	87
2 - N82 - S	1	F	134	161	197	197	161	134
2 - N82 - S	2	E	229	274	335	335	274	229
2 - N82 - S	3	D	134	161	197	197	161	134
3 - Fortunestown Lane - W	1	I	100	120	147	147	120	100
3 - Fortunestown Lane - W	2	H	355	424	519	519	424	355
3 - Fortunestown Lane - W	3	G	214	256	313	313	256	214
4 - N82 - N	1	K	388	463	567	567	463	388
4 - N82 - N	2	J	75	89	109	109	89	75
Pedestrians	1	L	8	9	11	11	9	8

Turning Proportions

Arm	Left Movement Percentage	Straight Movement Percentage	Right Movement Percentage
1 - Citywest Drive	28	55	17
2 - N82 - S	27	46	27
3 - Fortunestown Lane - W	15	53	32
4 - N82 - N	17	66	16

Accident Prediction

4-arm urban accident model

AInFlow (AADTx1000)	0.0
BInFlow (AADTx1000)	0.0
CInFlow (AADTx1000)	0.0
DInFlow (AADTx1000)	0.0
PedAFlow (Pedx1000/12hr)	0.0
PedBFlow (Pedx1000/12hr)	0.0
PedCFlow (Pedx1000/12hr)	0.0
PedDFlow (Pedx1000/12hr)	0.0
NumStagesPerCycle	2
SeparatePedStage	No

Note:*'AB Flow' is flow from Arm A to Arm B, where arms are labelled clockwise.*

Traffic Calming

Number	Type	OriginalMeanSpeed (kph)	Separation (m)	Width (m)	Length (m)
1	None	20	20	1.0	1.0
2	None	20	20	1.0	1.0
3	None	20	20	1.0	1.0
4	None	20	20	1.0	1.0

Note:*Speeds/distances are ignored if no traffic calming measures are present.*

4-armurban accident model results

Vehicle only accidents:	0.00accidents per year
Pedestrian only accidents:	0.00accidents per year
Total fatal casualties:	0.00casualties per year
Total serious casualties:	0.00casualties per year
Total slight casualties:	0.00casualties per year

Results

Note:*Duplicate solutions are not shown.*

Sequence1; Objective: CRITICAL CYCLE TIME

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
107.0	-0.63	51.57	51.57	77.5

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	18.0	24.0
9	30.0	3.0	33.0
18	39.0	7.0	46.0
10	52.0	21.0	73.0
8	84.0	10.0	94.0
6	100.0	7.0	0.0

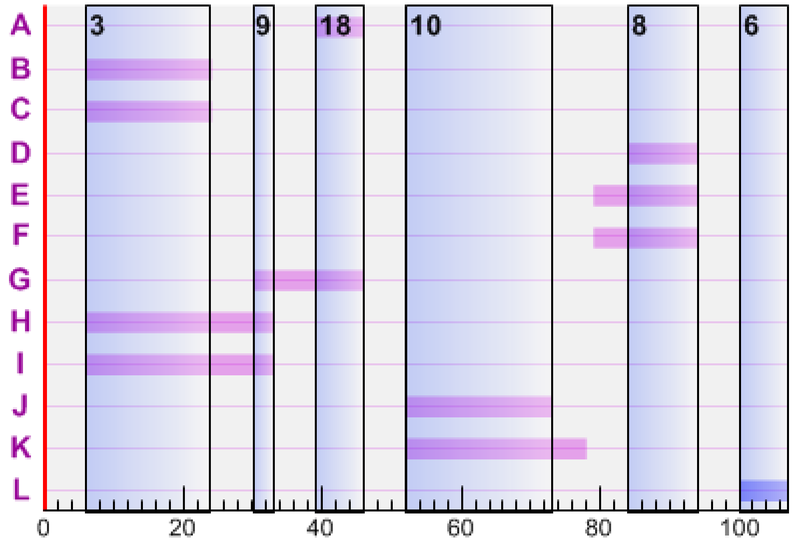
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	39	7.0	46						
B	6	18.0	24						
C	6	18.0	24						
D	84	10.0	94						
E	79	15.0	94						
F	79	15.0	94						
G	30	16.0	46						
H	6	27.0	33						
I	6	27.0	33						
J	52	21.0	73						
K	52	26.0	78						
L	100	7.0	0						

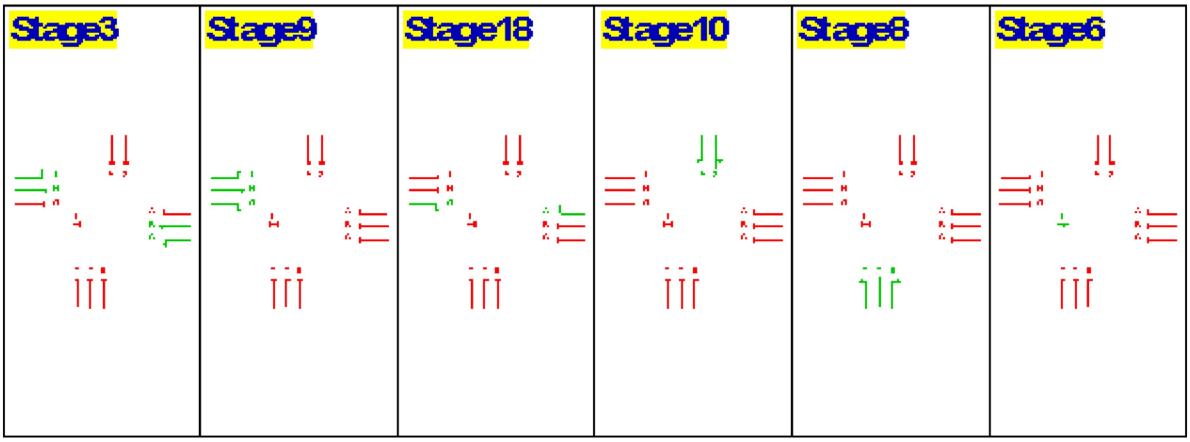
Phase Delays

Type	Phase	Terminating Stage	Starting Stage	Absolute Delay (s)	Relative Delay (s)
Losing	K	10	8	5.00	

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	175	C	19.50	47.36	2.30	52.47	71.52	0.39	4.80	4.41	7.30
1	2	344	B	19.50	88.13	8.42	89.67	0.37	5.02	14.00	8.98	6.80
1	3	106	A	8.50	89.12	2.62	72.92	23.43	1.28	4.24	2.96	2.10
2	1	164	F	16.50	53.55	2.44	58.12	54.86	0.55	4.81	4.26	5.60
2	2	279	E	16.50	83.99	6.51	85.95	4.71	3.45	10.88	7.43	5.70
2	3	164	D	11.50	99.85	4.55	83.38	7.94	2.66	7.15	4.50	3.10
3	1	122	I	28.50	32.48	1.10	25.03	259.58	0.06	2.78	2.73	9.40
3	2	433	H	28.50	50.23	6.04	77.23	16.54	1.87	12.20	10.34	15.50
3	3	261	G	17.50	90.39	6.55	87.20	3.21	3.82	10.67	6.85	5.30
4	1	473	K	27.50	75.99	9.98	90.57	-0.63	5.83	17.37	11.54	10.90
4	2	91	J	22.50	37.02	0.94	23.65	280.58	0.05	2.22	2.18	5.80
Ped	1	9	L	8.50	45.41	0.11	1.13	9999.00	0.00	0.25	0.25	0.00

Sequence1; Objective: MAXIMUM CAPACITY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	27.26	77.84	77.84	131.9

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

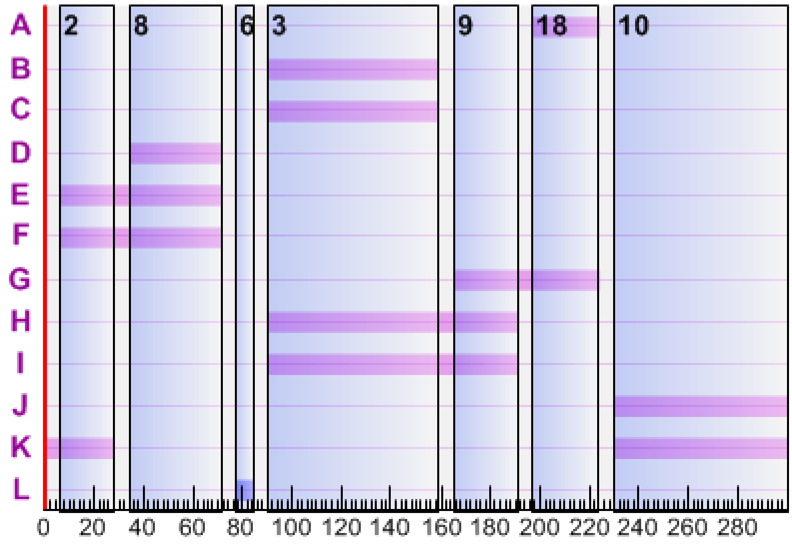
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
2	6.0	22.0	28.0
8	34.0	37.0	71.0
6	77.0	7.0	84.0
3	90.0	69.0	159.0
9	165.0	26.0	191.0
18	197.0	27.0	224.0
10	230.0	70.0	0.0

Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	197	27.0	224						
B	90	69.0	159						
C	90	69.0	159						
D	34	37.0	71						
E	6	65.0	71						
F	6	65.0	71						
G	165	59.0	224						
H	90	101.0	191						
I	90	101.0	191						
J	230	70.0	0						
K	230	98.0	28						
L	77	7.0	84						

Phase Timings Diagram



Final Stage Sequence

There are too many stages (7) to depict in this view.

Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	175	C	70.50	100.84	4.90	40.69	121.17	0.19	11.75	11.56	10.40
1	**2**	344	B	70.50	115.71	11.06	69.54	29.42	1.12	24.67	23.55	13.20
1	**3**	106	A	28.50	151.18	4.45	60.97	47.61	0.63	8.80	8.17	2.60
2	**1**	164	F	66.50	103.78	4.73	40.43	122.61	0.19	11.18	11.00	9.30
2	**2**	279	E	66.50	112.25	8.70	59.79	50.52	0.62	19.78	19.17	12.20
2	**3**	164	D	38.50	147.78	6.73	69.83	28.88	1.08	13.40	12.32	4.20
3	**1**	122	I	102.50	70.57	2.39	19.51	361.25	0.03	6.89	6.86	12.40
3	**2**	433	H	102.50	86.81	10.44	60.21	49.49	0.66	26.66	26.01	27.90
3	**3**	261	G	60.50	126.67	9.18	70.72	27.26	1.17	19.49	18.32	8.70
4	**1**	473	K	99.50	95.52	12.55	70.18	28.24	1.20	30.29	29.10	24.40
4	**2**	91	J	71.50	93.01	2.35	20.86	331.36	0.04	5.92	5.88	6.60
Ped	**1**	9	L	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence1; Objective: MINIMUM DELAY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
124.0	4.45	45.39	45.39	104.3

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

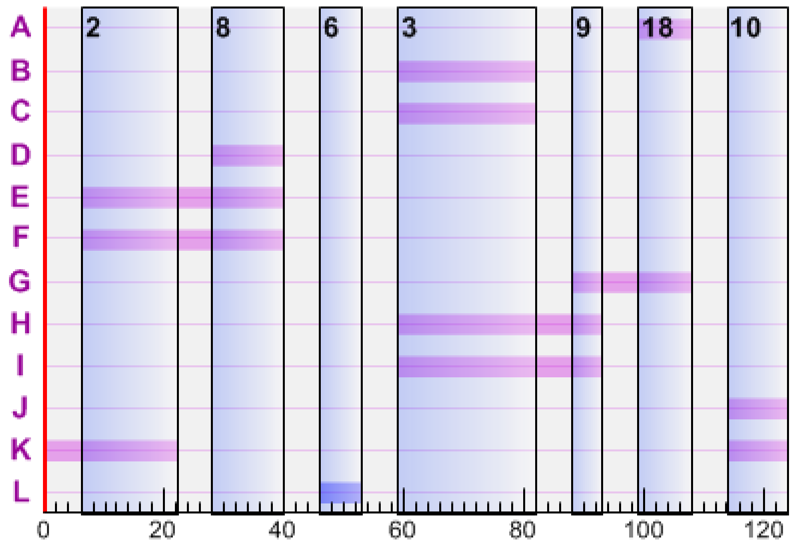
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
2	6.0	16.0	22.0
8	28.0	12.0	40.0
6	46.0	7.0	53.0
3	59.0	23.0	82.0
9	88.0	5.0	93.0
18	99.0	9.0	108.0
10	114.0	10.0	0.0

Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	99	9.0	108						
B	59	23.0	82						
C	59	23.0	82						
D	28	12.0	40						
E	6	34.0	40						
F	6	34.0	40						
G	88	20.0	108						
H	59	34.0	93						
I	59	34.0	93						
J	114	10.0	0						
K	114	32.0	22						
L	46	7.0	53						

Phase Timings Diagram



Final Stage Sequence

There are too many stages (7) to depict in this view.

Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	175	C	24.50	50.26	2.44	48.40	85.95	0.31	5.32	5.01	8.20
1	2	344	B	24.50	73.37	7.01	82.71	8.81	2.71	12.92	10.21	8.60
1	3	106	A	10.50	86.76	2.55	68.40	31.57	0.97	4.39	3.41	2.30
2	1	164	F	35.50	36.75	1.67	31.30	187.51	0.10	4.27	4.17	12.80
2	2	279	E	35.50	39.79	3.08	46.30	94.40	0.28	7.54	7.26	18.50
2	3	164	D	13.50	103.39	4.71	82.32	9.34	2.45	7.66	5.20	3.10
3	1	122	I	35.50	35.21	1.19	23.29	286.49	0.05	3.12	3.07	10.20
3	2	433	H	35.50	49.66	5.97	71.85	25.26	1.31	12.97	11.65	18.80
3	3	261	G	21.50	81.53	5.91	82.26	9.41	2.55	10.39	7.84	6.20
4	1	473	K	33.50	68.05	8.94	86.16	4.45	3.76	16.89	13.13	13.20
4	2	91	J	11.50	69.59	1.76	53.62	67.85	0.41	3.31	2.90	2.40
Ped	1	9	L	8.50	53.88	0.13	1.31	9999.00	0.00	0.29	0.29	0.00

Sequence2; Objective: CRITICAL CYCLE TIME

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
253.0	-0.56	87.47	87.47	112.1

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

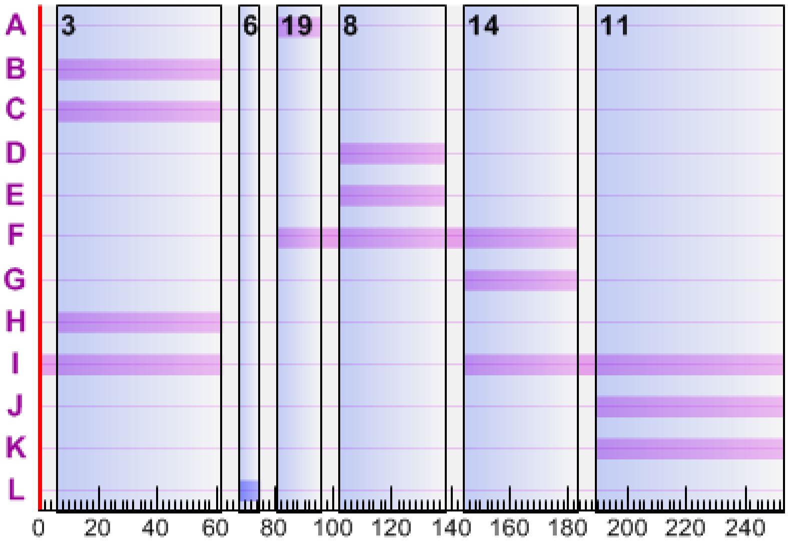
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	56.0	62.0
6	68.0	7.0	75.0
19	81.0	15.0	96.0
8	102.0	36.0	138.0
14	144.0	39.0	183.0
11	189.0	64.0	0.0

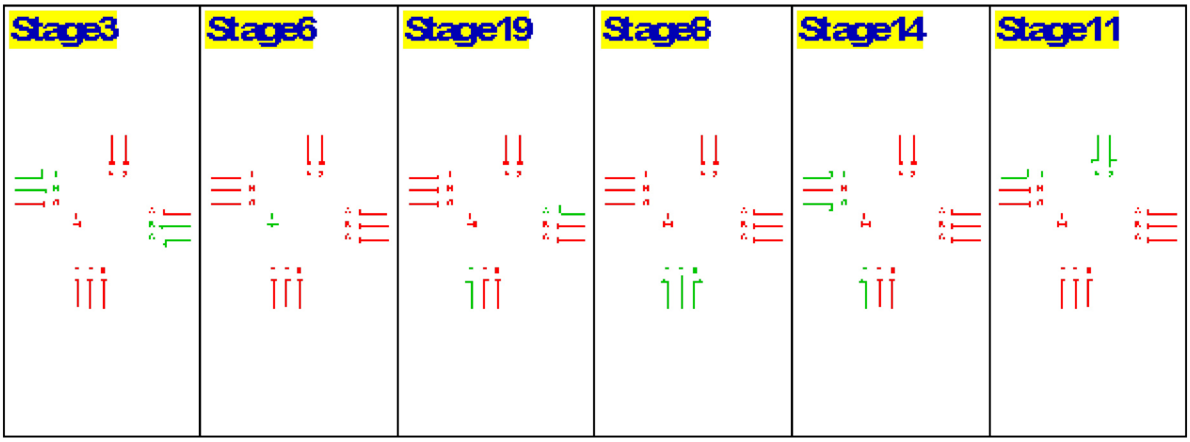
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	81	15.0	96						
B	6	56.0	62						
C	6	56.0	62						
D	102	36.0	138						
E	102	36.0	138						
F	81	102.0	183						
G	144	39.0	183						
H	6	56.0	62						
I	144	171.0	62						
J	189	64.0	0						
K	189	64.0	0						
L	68	7.0	75						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	175	C	57.50	87.65	4.26	42.08	113.90	0.21	10.06	9.85	9.90
1	**2**	344	B	57.50	102.74	9.82	71.90	25.17	1.29	21.35	20.06	12.30
1	**3**	106	A	16.50	227.27	6.69	88.82	1.33	3.82	10.94	7.11	1.60
2	**1**	164	F	103.50	49.41	2.25	21.91	310.84	0.04	7.08	7.04	19.40
2	**2**	279	E	37.50	158.86	12.31	89.42	0.65	4.74	22.43	17.69	5.10
2	**3**	164	D	37.50	113.98	5.19	60.46	48.85	0.63	10.78	10.15	5.30
3	**1**	122	I	172.50	13.93	0.47	9.78	820.45	0.01	2.80	2.80	25.90
3	**2**	433	H	57.50	135.33	16.28	90.51	-0.56	5.70	31.44	25.74	9.20
3	**3**	261	G	40.50	158.68	11.50	89.10	1.02	4.55	20.80	16.25	5.00
4	**1**	473	K	65.50	125.70	16.52	89.91	0.10	5.43	32.64	27.21	11.20
4	**2**	91	J	65.50	74.31	1.88	19.21	368.57	0.03	4.86	4.83	7.20
Ped	**1**	9	L	8.50	118.43	0.30	2.68	9999.00	0.00	0.61	0.61	0.00

Sequence2; Objective: MAXIMUM CAPACITY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	1.00	94.89	94.89	117.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

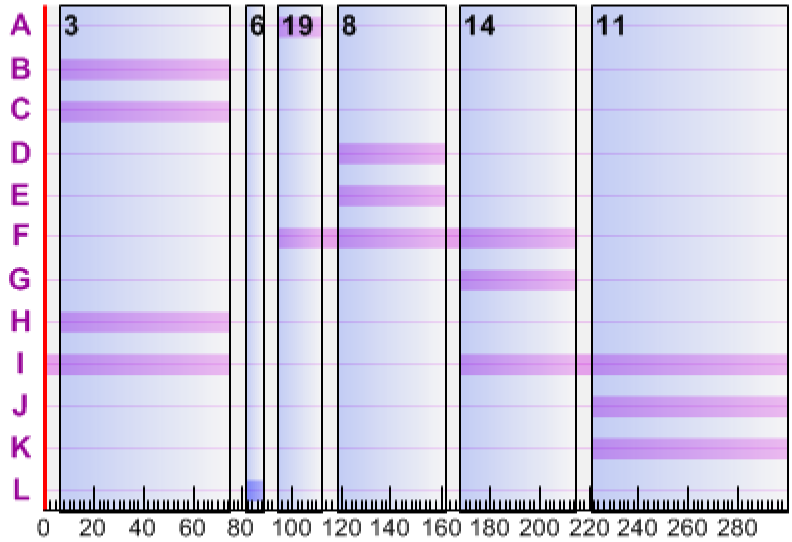
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	69.0	75.0
6	81.0	7.0	88.0
19	94.0	18.0	112.0
8	118.0	44.0	162.0
14	168.0	47.0	215.0
11	221.0	79.0	0.0

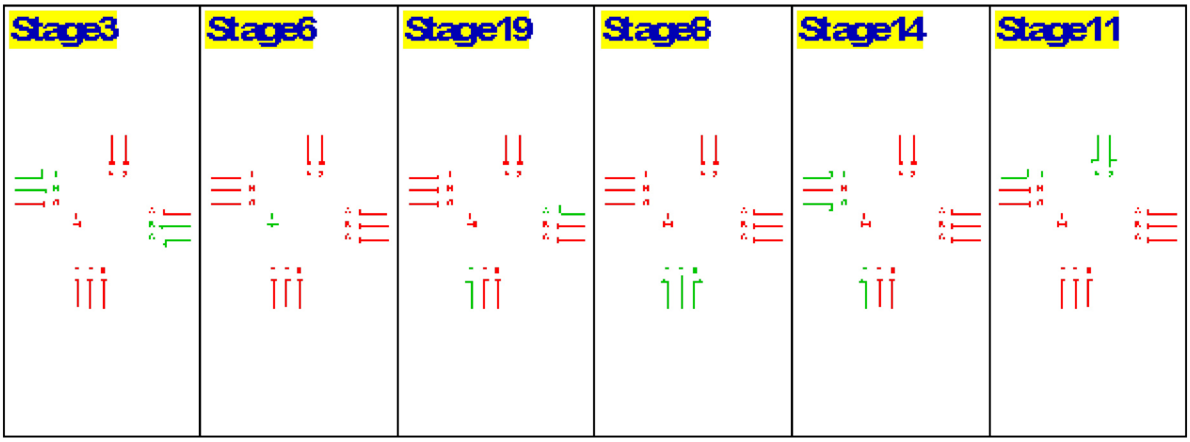
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	94	18.0	112						
B	6	69.0	75						
C	6	69.0	75						
D	118	44.0	162						
E	118	44.0	162						
F	94	121.0	215						
G	168	47.0	215						
H	6	69.0	75						
I	168	207.0	75						
J	221	79.0	0						
K	221	79.0	0						
L	81	7.0	88						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	175	C	70.50	100.84	4.90	40.69	121.17	0.19	11.75	11.56	10.40
1	**2**	344	B	70.50	115.71	11.06	69.54	29.42	1.12	24.67	23.55	13.20
1	**3**	106	A	19.50	251.30	7.40	89.11	1.00	3.91	12.35	8.44	1.60
2	**1**	164	F	122.50	58.57	2.67	21.95	310.08	0.04	8.40	8.36	19.40
2	**2**	279	E	45.50	169.19	13.11	87.39	2.99	3.92	24.81	20.89	5.40
2	**3**	164	D	45.50	130.75	5.96	59.09	52.31	0.58	12.56	11.99	5.50
3	**1**	122	I	208.50	15.15	0.51	9.59	838.25	0.01	3.19	3.18	26.40
3	**2**	433	H	70.50	141.06	16.97	87.53	2.82	4.21	34.43	30.22	10.40
3	**3**	261	G	48.50	173.72	12.59	88.22	2.02	4.19	23.43	19.24	5.10
4	**1**	473	K	80.50	130.96	17.21	86.75	3.75	3.97	35.82	31.85	12.80
4	**2**	91	J	80.50	85.60	2.16	18.53	385.65	0.03	5.68	5.65	7.50
Ped	**1**	9	L	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence2; Objective: MINIMUM DELAY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
249.0	-0.72	86.89	86.89	113.6

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

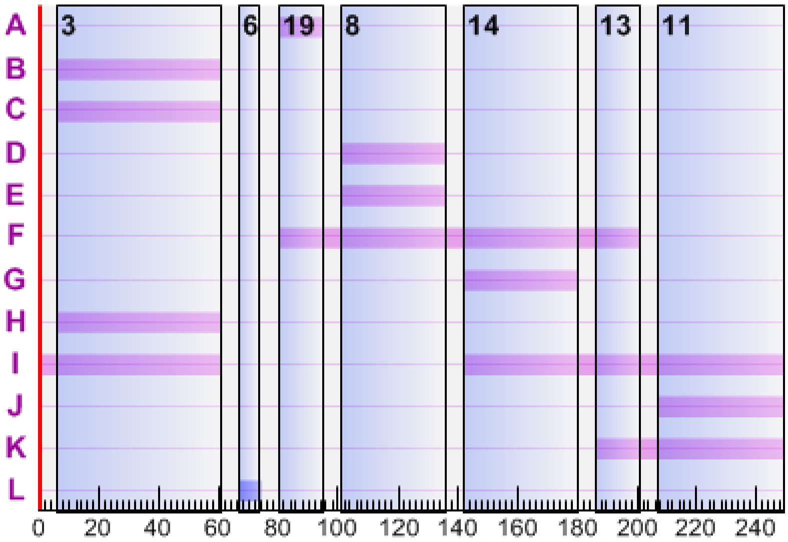
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	55.0	61.0
6	67.0	7.0	74.0
19	80.0	15.0	95.0
8	101.0	35.0	136.0
14	142.0	38.0	180.0
13	186.0	15.0	201.0
11	207.0	42.0	0.0

Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	80	15.0	95						
B	6	55.0	61						
C	6	55.0	61						
D	101	35.0	136						
E	101	35.0	136						
F	80	121.0	201						
G	142	38.0	180						
H	6	55.0	61						
I	142	168.0	61						
J	207	42.0	0						
K	186	63.0	0						
L	67	7.0	74						

Phase Timings Diagram



Final Stage Sequence

There are too many stages (7) to depict in this view.

Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	175	C	56.50	86.43	4.20	42.14	113.55	0.21	9.91	9.70	9.90
1	**2**	344	B	56.50	101.48	9.70	72.02	24.96	1.30	21.05	19.75	12.20
1	**3**	106	A	16.50	215.50	6.35	87.41	2.96	3.42	10.42	6.99	1.60
2	**1**	164	F	122.50	35.88	1.63	18.22	394.07	0.03	5.99	5.96	23.90
2	**2**	279	E	36.50	162.41	12.59	90.42	-0.46	5.24	22.68	17.44	5.00
2	**3**	164	D	36.50	113.28	5.16	61.14	47.21	0.65	10.66	10.01	5.20
3	**1**	122	I	169.50	13.80	0.47	9.79	818.98	0.01	2.77	2.76	25.80
3	**2**	433	H	56.50	134.50	16.18	90.65	-0.72	5.79	31.14	25.35	9.20
3	**3**	261	G	39.50	161.29	11.69	89.91	0.10	4.92	20.95	16.03	4.80
4	**1**	473	K	64.50	124.06	16.30	89.86	0.15	5.40	32.17	26.77	11.20
4	**2**	91	J	43.50	92.19	2.33	28.46	216.19	0.08	5.37	5.29	4.80
Ped	**1**	9	L	8.50	116.42	0.29	2.64	9999.00	0.00	0.60	0.60	0.00

OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009

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Web: www.trlsoftware.co.uk

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File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 01\Site 01 - AM.osc
Report generation date: 19/01/2022 18:50:57

Summary

File Description

Title	(untitled)
Date	13/05/2021
Location	
Driving Side	Left
Identifier	
Client	
Jobnumber	
Enumerator	ronan.kearns [SIMON-HP]
Status	(new file)
Description	

Run Options

Run Evaluation Set	No
Evaluation Only	No
Optimise Critical Cycle TimeOnly	No
Use Horizontal Queues	Yes
Favour Continuous Green	No
Phase Timings Fuzziness (s)	0.5
Integer Phase Timings	Yes
Phase Snapping Distance (s)	0
Automatic Lane Turning Props	Yes
Automatic Vehicle Props	No

Geometry

Arms

Arm	Name	Exit Width (m)	Approach Speed (kph)	Exit Speed (kph)	Speed Limit (kph)	Stagger Distance (m)
1	Citywest Drive	50.0	10	10	80	0
2	N82 - S	50.0	10	10	80	0
3	Fortunestown Lane - W	50.0	10	10	80	0
4	N82 - N	50.0	10	10	80	0

Traffic Streams

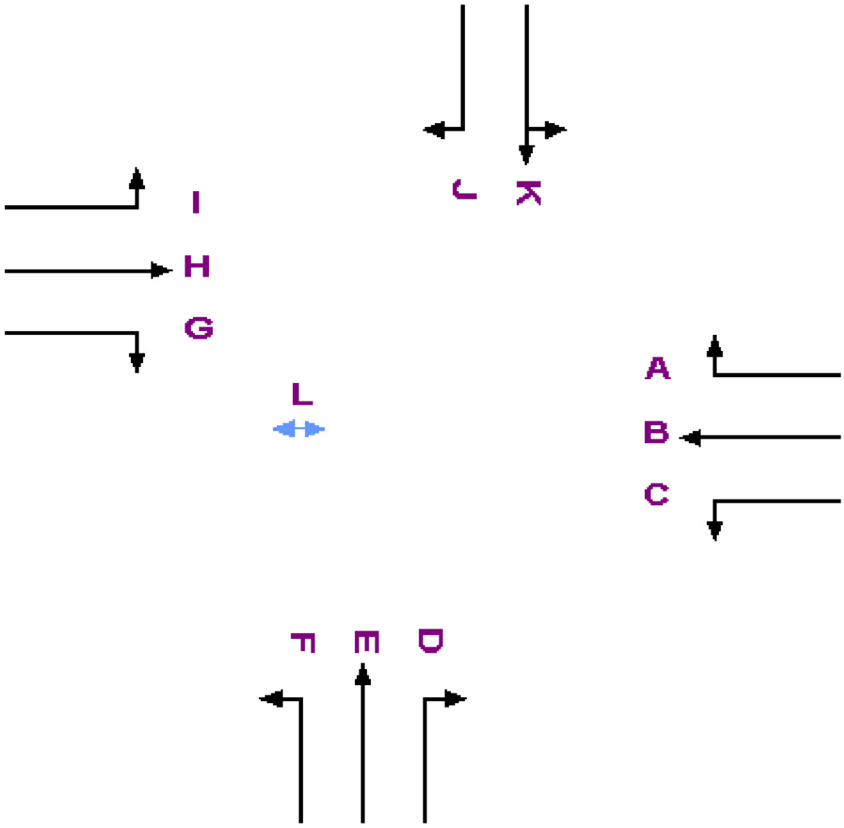
Arm	Traffic Stream	Type	Name	Sat Flow (PCU/hr)	Estimate Sat Flow	Sat Flow 2 (PCU/hr)	Green Phase	Arrow Phase
1	**1**	Traffic		1830	Yes	0	C	-
1	**2**	Traffic		2105	Yes	0	B	-
1	**3**	Traffic		1830	Yes	0	A	-
2	**1**	Traffic		1830	Yes	0	F	-
2	**2**	Traffic		2105	Yes	0	E	-
2	**3**	Traffic		1830	Yes	0	D	-
3	**1**	Traffic		1830	Yes	0	I	-
3	**2**	Traffic		2105	Yes	0	H	-
3	**3**	Traffic		1830	Yes	0	G	-
4	**1**	Traffic		2050	Yes	0	K	-
4	**2**	Traffic		1830	Yes	0	J	-
(Ped)	**1**	Pedestrian		10000	Yes	0	L	-

Arm	Traffic Stream	Relative Start Displacement (s)	Relative End Displacement (s)	Max Deg Sat (%)	Delay Weight (%)	Max Queue (PCU)	Initial Queue (PCU)	Average PCU Per Veh	Heavy Vehicles Percentage
1	**1**	0.0	0.0	90	100	0	0.0	1.10	0
1	**2**	0.0	0.0	90	100	0	0.0	1.10	0
1	**3**	0.0	0.0	90	100	0	0.0	1.10	0
2	**1**	0.0	0.0	90	100	0	0.0	1.10	0
2	**2**	0.0	0.0	90	100	0	0.0	1.10	0
2	**3**	0.0	0.0	90	100	0	0.0	1.10	0
3	**1**	0.0	0.0	90	100	0	0.0	1.10	0
3	**2**	0.0	0.0	90	100	0	0.0	1.10	0
3	**3**	0.0	0.0	90	100	0	0.0	1.10	0
4	**1**	0.0	0.0	90	100	0	0.0	1.10	0
4	**2**	0.0	0.0	90	100	0	0.0	1.10	0
(Ped)	**1**	0.0	0.0	90	100	0	0.0	-	0

Lanes

Arm	Traffic Stream	Lane	Name	Nearside Dest Arm	Straight Dest Arm	Offside Dest Arm	Proportion That Turn	Turning Radius (m)	IsNearside Lane	Width (m)	Gradient (%)	Short Lane Storage (PCU)
1	**1**	**1**		2			1.00	10	No	3.50	0.0	0
1	**2**	**1**			3		0.00	10	No	3.50	0.0	0
1	**3**	**1**				4	1.00	10	No	3.50	0.0	0
2	**1**	**1**		3			1.00	10	No	3.50	0.0	0
2	**2**	**1**			4		0.00	10	No	3.50	0.0	0
2	**3**	**1**				1	1.00	10	No	3.50	0.0	0
3	**1**	**1**		4			1.00	10	No	3.50	0.0	0
3	**2**	**1**			1		0.00	10	No	3.50	0.0	0
3	**3**	**1**				2	1.00	10	No	3.50	0.0	0
4	**1**	**1**		1	2		0.18	10	No	3.50	0.0	0
4	**2**	**1**				3	1.00	10	No	3.50	0.0	0

Junction Diagram



Signals

Signals

Max Cycle Time (s)	300
Fixed Cycle Time (s)	0
Evaluation Cycle Time (s)	0
Start Displacement (s)	1.4
End Displacement (s)	2.9

Phases

Phase	Name	Type	Associated Phase	Phase Min Green (s)	Phase Max Green (s)	Double Green
A	(Name)	Traffic	-	7.0	0.0	No
B	(Name)	Traffic	-	7.0	0.0	No
C	(Name)	Traffic	-	7.0	0.0	No
D	(Name)	Traffic	-	7.0	0.0	No
E	(Name)	Traffic	-	7.0	0.0	No
F	(Name)	Traffic	-	7.0	0.0	No
G	(Name)	Traffic	-	7.0	0.0	No
H	(Name)	Traffic	-	7.0	0.0	No
I	(Name)	Traffic	-	7.0	0.0	No
J	(Name)	Traffic	-	7.0	0.0	No
K	(Name)	Traffic	-	7.0	0.0	No
L	(Name)	Pedestrian	-	7.0	0.0	No

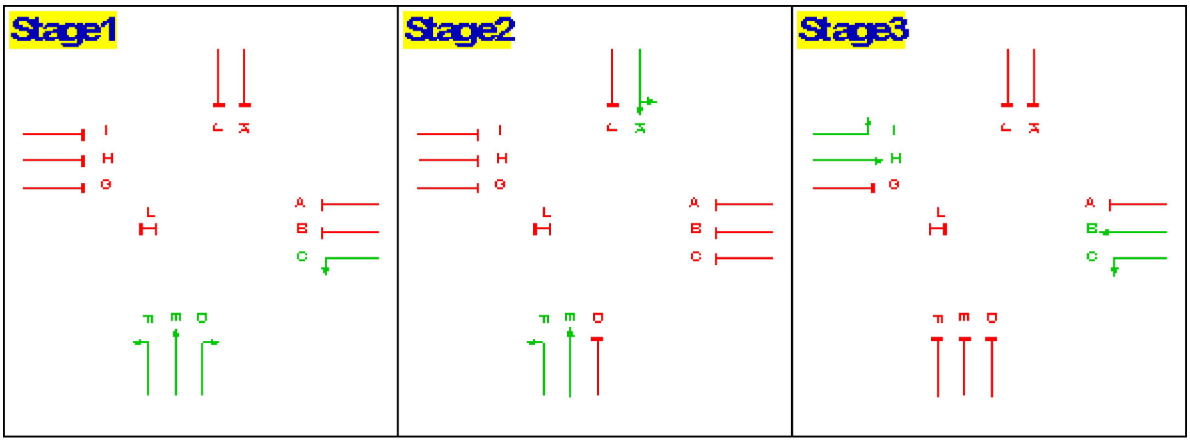
Intergreen Matrix

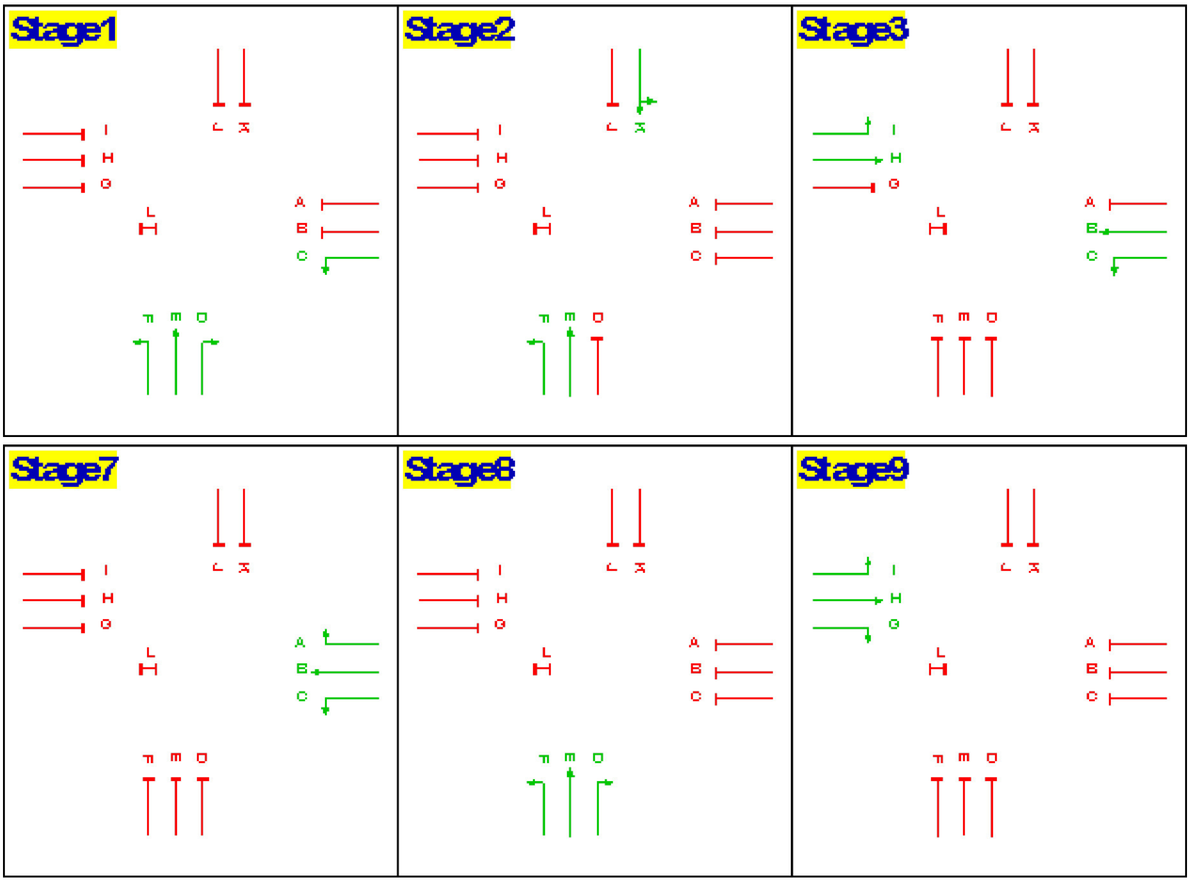
		To											
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
From	**A**	-			6	6			6	6	6	6	6
	B		-		6	6	6	6			6	6	6
	C			-				6			6	6	6
	D	6	6		-			6	6	6	6	6	6
	E	6	6			-		6	6	6	6		6
	F		6				-				6		6
	G		6	6	6	6		-			6	6	6
	H	6			6	6			-		6	6	6
	I	6			6	6				-			6
	J	6	6	6	6	6	6	6	6		-		6
	K	6	6	6	6			6	6			-	6
	L	6	6	6	6	6	6	6	6	6	6	6	-

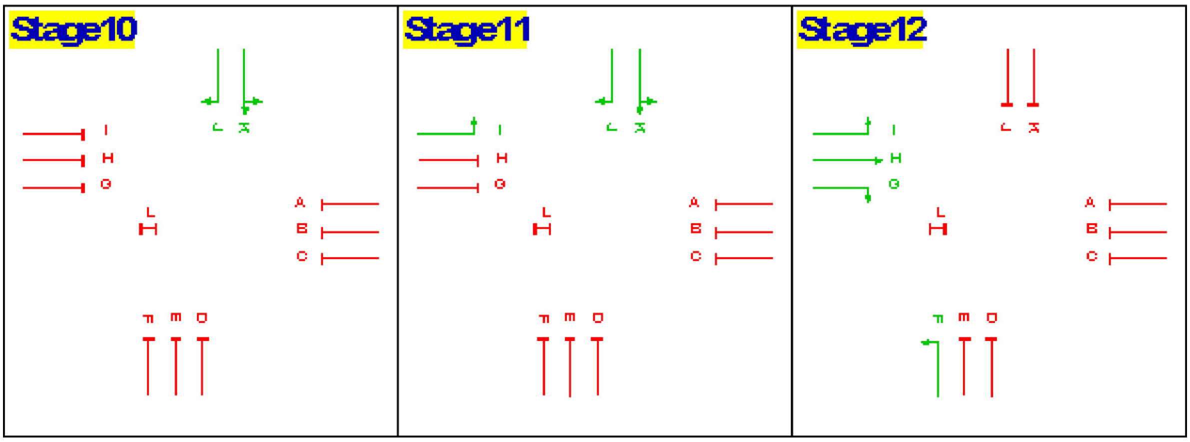
Stages

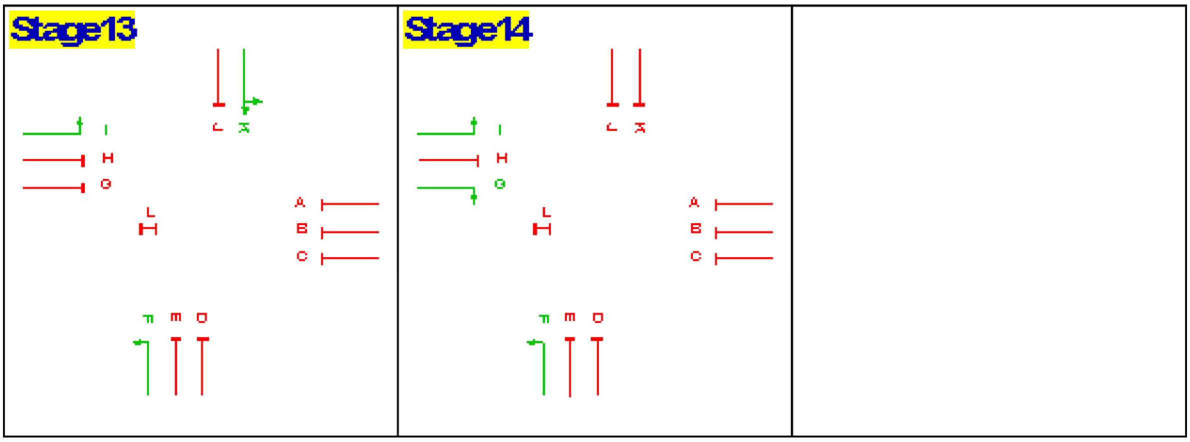
Stage	Stage Min Green (s)	Phases In This Stage	Use To Generate Sequences
1	-1	C,D,E,F	Yes
2	-1	E,F,K	Yes
3	-1	B,C,H,I	Yes
5	-1	A,F,G	Yes
6	-1	L	Yes
7	-1	A,B,C	Yes
8	-1	D,E,F	Yes
9	-1	G,H,I	Yes
10	-1	J,K	Yes
11	-1	I,J,K	Yes
12	-1	F,G,H,I	Yes
13	-1	F,I,K	Yes
14	-1	F,G,I	Yes
16	-1	B,C,I	Yes
17	-1	A,C,F	Yes
18	-1	A,G	Yes
19	-1	A,F	Yes

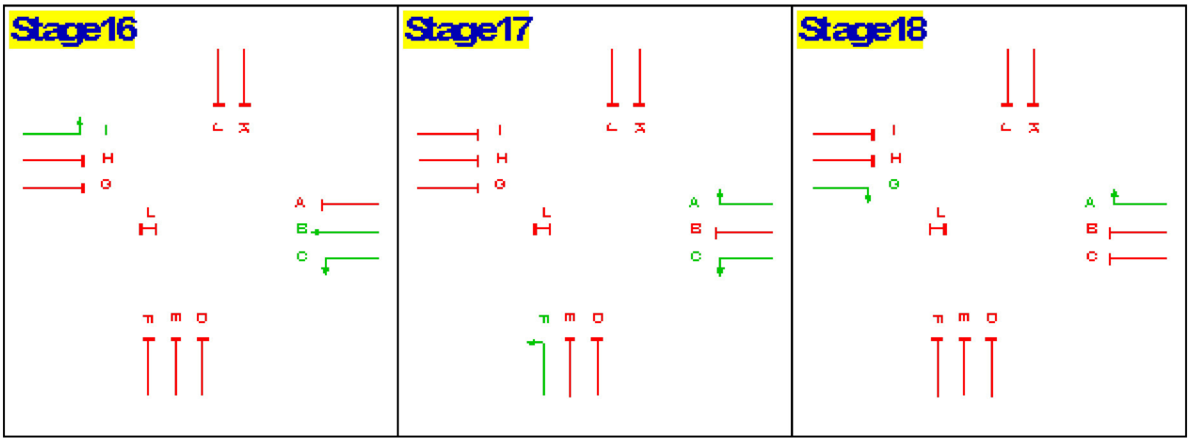
Stage Diagrams




Stage1
Stage2
Stage3
Stage7
Stage8
Stage9


Stage10
Stage11
Stage12





Sequences

Sequence	Name	Stages In This Sequence
1		2,8,6,3,10
2		2,10,3,6,8

Constraints

(No constraints)

Traffic

Note:*Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

Configuration

Traffic Scaling Factor	1.00
Time Period (min)	90
Time Segment Length (min)	15
Signal Optimiser Flows	Average
PCUs per Heavy Vehicle	2.00

Demand Sets

Name	Selected	Time Start	Time End	Profile Type	Use Relationship	Relationship
Survey	No	08:00	09:30	ODTAB	No	D1
2027 Base	No	08:00	09:30	ODTAB	No	D1
2027 Base + Dev	No	08:00	09:30	ODTAB	No	D1
2032 Base	No	08:00	09:30	ODTAB	No	D1
2032 Base + Dev	No	08:00	09:30	ODTAB	No	D1
2042 Bsae	No	08:00	09:30	ODTAB	No	D1
2042 Bsae + Dev	Yes	08:00	09:30	ODTAB	No	D1

Demand Set7 - 2042 Bsae + Dev

ODTAB Data (PCU/hr during central 60 min peak period)

		To			
		Arm 1	Arm 2	Arm 3	Arm 4
From	Arm 1	-	45	696	86
	Arm 2	118	-	426	350
	Arm 3	579	309	-	180
	Arm 4	73	245	196	-

Average pedestrian flow on each pedestrian stream (if applicable): 10 ped/hr

Traffic flows (PCU/hr)

Arm	Traffic Stream	Phase	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:15-09:30
1 - Citywest Drive	1	C	31	37	45	45	37	31
1 - Citywest Drive	2	B	521	622	762	762	622	521
1 - Citywest Drive	3	A	62	74	91	91	74	62
2 - N82 - S	1	F	322	384	471	471	384	322
2 - N82 - S	2	E	261	312	382	382	312	261
2 - N82 - S	3	D	87	104	127	127	104	87
3 - Fortunestown Lane - W	1	I	136	163	199	199	163	136
3 - Fortunestown Lane - W	2	H	433	516	633	633	516	433
3 - Fortunestown Lane - W	3	G	232	277	340	340	277	232
4 - N82 - N	1	K	239	285	350	350	285	239
4 - N82 - N	2	J	146	175	214	214	175	146
Pedestrians	1	L	8	9	11	11	9	8

Turning Proportions

Arm	Left Movement Percentage	Straight Movement Percentage	Right Movement Percentage
1 - Citywest Drive	5	84	10
2 - N82 - S	48	39	13
3 - Fortunestown Lane - W	17	54	29
4 - N82 - N	14	48	38

Accident Prediction

4-arm urban accident model

AInFlow (AADTx1000)	0.0
BInFlow (AADTx1000)	0.0
CInFlow (AADTx1000)	0.0
DInFlow (AADTx1000)	0.0
PedAFlow (Pedx1000/12hr)	0.0
PedBFlow (Pedx1000/12hr)	0.0
PedCFlow (Pedx1000/12hr)	0.0
PedDFlow (Pedx1000/12hr)	0.0
NumStagesPerCycle	2
SeparatePedStage	No

Note:*'AB Flow' is flow from Arm A to Arm B, where arms are labelled clockwise.*

Traffic Calming

Number	Type	OriginalMeanSpeed (kph)	Separation (m)	Width (m)	Length (m)
1	None	20	20	1.0	1.0
2	None	20	20	1.0	1.0
3	None	20	20	1.0	1.0
4	None	20	20	1.0	1.0

Note:*Speeds/distances are ignored if no traffic calming measures are present.*

4-armurban accident model results

Vehicle only accidents:	0.00accidents per year
Pedestrian only accidents:	0.00accidents per year
Total fatal casualties:	0.00casualties per year
Total serious casualties:	0.00casualties per year
Total slight casualties:	0.00casualties per year

Results

***Note:**Duplicate solutions are not shown.*

Sequence1; Objective: CRITICAL CYCLE TIME

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
215.0	-1.21	84.19	84.19	138.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

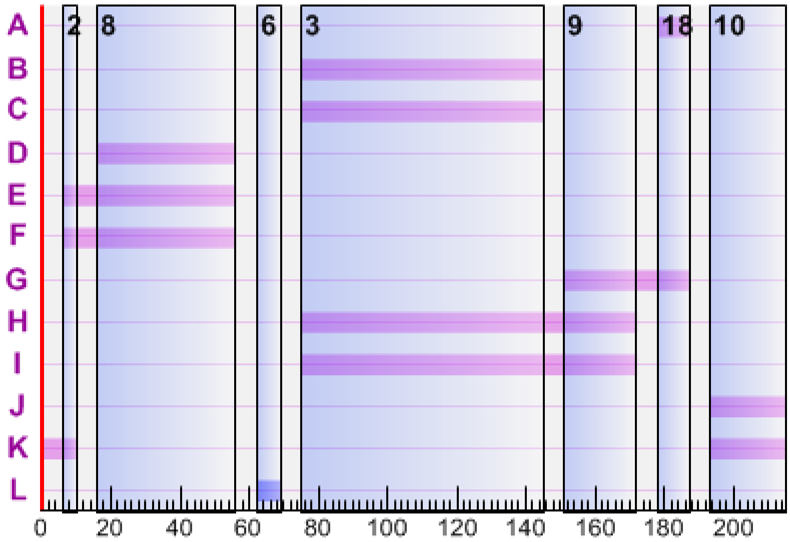
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
2	6.0	4.0	10.0
8	16.0	40.0	56.0
6	62.0	7.0	69.0
3	75.0	70.0	145.0
9	151.0	21.0	172.0
18	178.0	9.0	187.0
10	193.0	22.0	0.0

Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	178	9.0	187						
B	75	70.0	145						
C	75	70.0	145						
D	16	40.0	56						
E	6	50.0	56						
F	6	50.0	56						
G	151	36.0	187						
H	75	97.0	172						
I	75	97.0	172						
J	193	22.0	0						
K	193	32.0	10						
L	62	7.0	69						

Phase Timings Diagram



Final Stage Sequence

There are too many stages (7) to depict in this view.

Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	38	C	71.50	49.16	0.52	6.24	9999.00	0.00	1.53	1.53	4.10
1	2	635	B	71.50	97.89	17.27	90.71	-0.78	6.27	35.26	28.99	17.10
1	3	76	A	10.50	213.73	4.51	85.04	5.84	2.72	7.11	4.38	1.10
2	1	392	F	51.50	118.71	12.93	89.43	0.64	5.00	24.32	19.32	8.90
2	2	318	E	51.50	81.19	7.17	63.07	42.70	0.75	16.18	15.42	14.00
2	3	106	D	41.50	77.19	2.27	30.01	199.91	0.09	5.31	5.22	5.90
3	1	166	I	98.50	35.41	1.63	19.80	354.55	0.03	5.59	5.56	22.30
3	2	527	H	98.50	45.06	6.60	54.65	64.70	0.48	19.55	19.06	50.80
3	3	283	G	37.50	135.80	10.68	88.66	1.51	4.42	19.21	14.79	5.60
4	1	291	K	33.50	148.73	12.02	91.10	-1.21	5.67	21.25	15.58	5.20
4	2	178	J	23.50	168.75	8.34	88.99	1.14	4.25	14.06	9.82	3.00
Ped	1	9	L	8.50	99.38	0.25	2.28	9999.00	0.00	0.52	0.52	0.00

Sequence1; Objective: MAXIMUM CAPACITY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	3.79	96.25	96.25	149.2

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

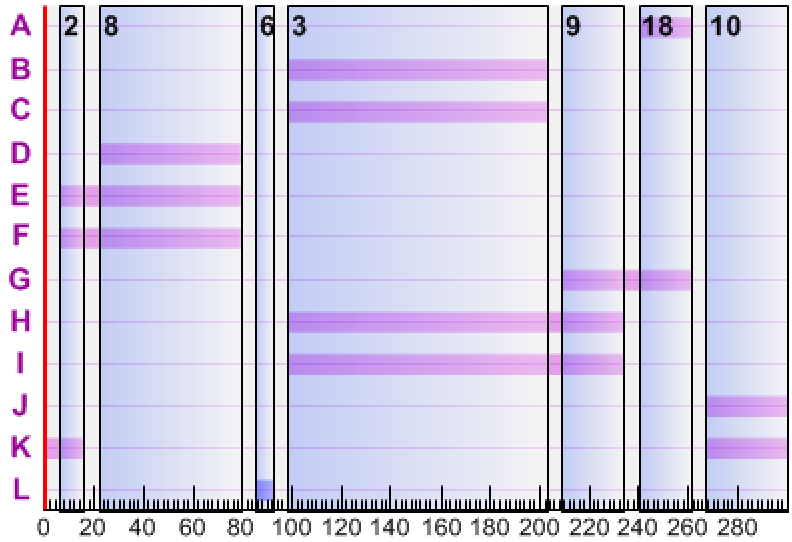
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
2	6.0	10.0	16.0
8	22.0	57.0	79.0
6	85.0	7.0	92.0
3	98.0	105.0	203.0
9	209.0	25.0	234.0
18	240.0	21.0	261.0
10	267.0	33.0	0.0

Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	240	21.0	261						
B	98	105.0	203						
C	98	105.0	203						
D	22	57.0	79						
E	6	73.0	79						
F	6	73.0	79						
G	209	52.0	261						
H	98	136.0	234						
I	98	136.0	234						
J	267	33.0	0						
K	267	49.0	16						
L	85	7.0	92						

Phase Timings Diagram



Final Stage Sequence

There are too many stages (7) to depict in this view.

Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	38	C	106.50	63.95	0.68	5.85	9999.00	0.00	2.06	2.06	4.40
1	2	635	B	106.50	106.50	18.79	84.98	5.91	3.54	42.64	39.10	22.90
1	3	76	A	22.50	154.85	3.27	55.37	62.53	0.45	6.40	5.95	1.80
2	1	392	F	74.50	137.85	15.01	86.26	4.34	3.70	30.34	26.64	10.20
2	2	318	E	74.50	106.83	9.44	60.83	47.95	0.66	21.93	21.27	15.00
2	3	106	D	58.50	105.99	3.12	29.70	202.99	0.08	7.35	7.26	6.00
3	1	166	I	137.50	49.10	2.26	19.79	354.74	0.03	7.78	7.75	22.40
3	2	527	H	137.50	61.66	9.03	54.62	64.77	0.48	27.08	26.59	50.80
3	3	283	G	53.50	161.63	12.71	86.72	3.79	3.70	24.24	20.54	6.00
4	1	291	K	50.50	154.76	12.51	84.33	6.73	3.03	24.45	21.41	6.40
4	2	178	J	34.50	183.79	9.09	84.58	6.41	2.94	16.55	13.61	3.30
Ped	1	9	L	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence1; Objective: MINIMUM DELAY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
211.0	-1.33	77.84	77.84	139.1

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

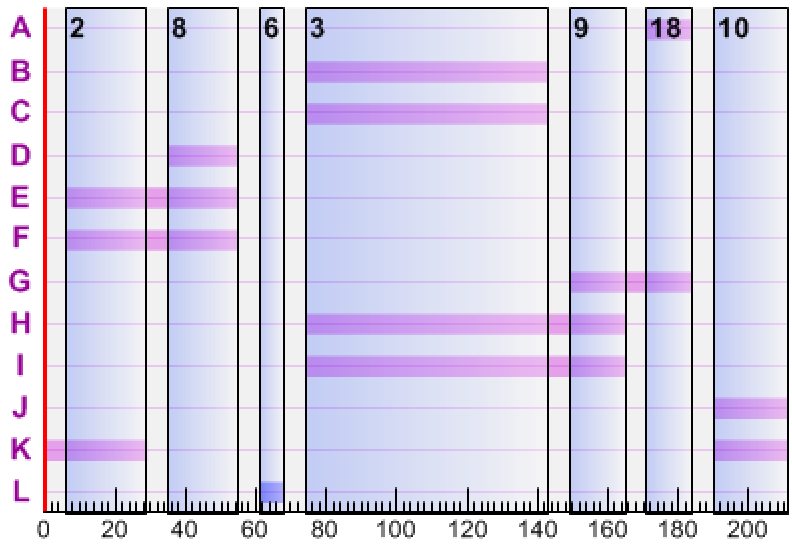
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
2	6.0	23.0	29.0
8	35.0	20.0	55.0
6	61.0	7.0	68.0
3	74.0	69.0	143.0
9	149.0	16.0	165.0
18	171.0	13.0	184.0
10	190.0	21.0	0.0

Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	171	13.0	184						
B	74	69.0	143						
C	74	69.0	143						
D	35	20.0	55						
E	6	49.0	55						
F	6	49.0	55						
G	149	35.0	184						
H	74	91.0	165						
I	74	91.0	165						
J	190	21.0	0						
K	190	50.0	29						
L	61	7.0	68						

Phase Timings Diagram



Final Stage Sequence

There are too many stages (7) to depict in this view.

Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	38	C	70.50	48.03	0.51	6.21	9999.00	0.00	1.50	1.49	4.10
1	2	635	B	70.50	95.02	16.76	90.28	-0.32	5.97	34.36	28.39	17.50
1	3	76	A	14.50	123.29	2.60	60.43	48.92	0.61	4.82	4.21	1.60
2	1	392	F	50.50	117.55	12.80	89.50	0.56	5.04	24.00	18.96	8.80
2	2	318	E	50.50	79.89	7.06	63.12	42.59	0.76	15.90	15.14	14.00
2	3	106	D	21.50	106.78	3.14	56.85	58.32	0.50	6.20	5.70	2.80
3	1	166	I	92.50	37.37	1.72	20.69	334.96	0.04	5.69	5.65	21.30
3	2	527	H	92.50	47.80	7.00	57.11	57.60	0.56	19.95	19.39	46.60
3	3	283	G	36.50	137.67	10.82	89.40	0.67	4.74	19.28	14.54	5.50
4	1	291	K	51.50	76.80	6.21	58.16	54.75	0.56	14.25	13.69	14.10
4	2	178	J	22.50	181.58	8.98	91.22	-1.33	5.22	14.88	9.66	2.80
Ped	1	9	L	8.50	97.38	0.24	2.23	9999.00	0.00	0.51	0.51	0.00

Sequence2; Objective: CRITICAL CYCLE TIME

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
297.0	-0.73	103.31	103.31	146.3

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

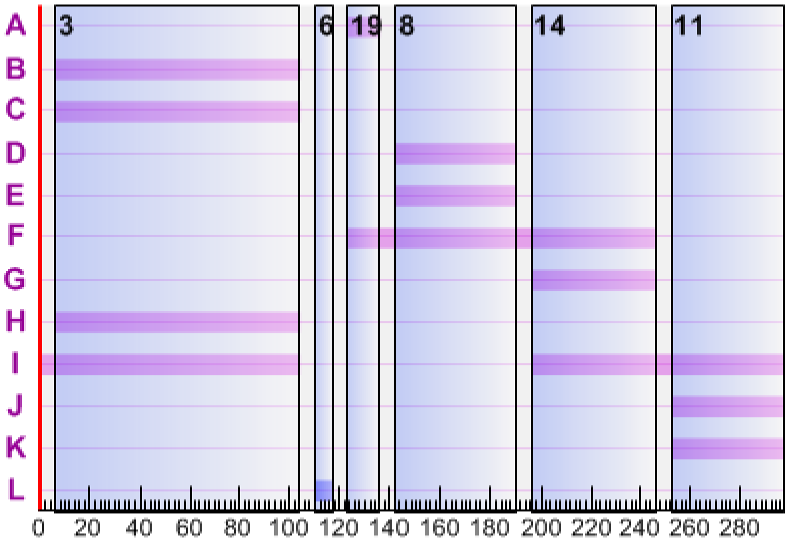
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	98.0	104.0
6	110.0	7.0	117.0
19	123.0	13.0	136.0
8	142.0	48.0	190.0
14	196.0	50.0	246.0
11	252.0	45.0	0.0

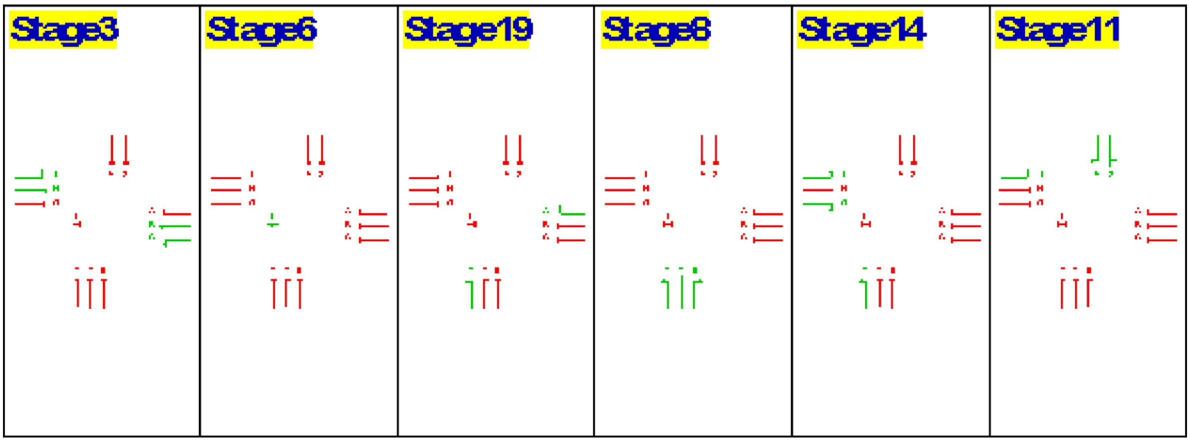
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	123	13.0	136						
B	6	98.0	104						
C	6	98.0	104						
D	142	48.0	190						
E	142	48.0	190						
F	123	123.0	246						
G	196	50.0	246						
H	6	98.0	104						
I	196	205.0	104						
J	252	45.0	0						
K	252	45.0	0						
L	110	7.0	117						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	38	C	99.50	67.32	0.71	6.20	9999.00	0.00	2.10	2.10	4.10
1	2	635	B	99.50	121.39	21.41	90.04	-0.05	5.81	45.72	39.90	17.70
1	3	76	A	14.50	252.62	5.33	85.07	5.80	2.73	8.79	6.06	1.10
2	1	392	F	124.50	66.98	7.29	51.10	76.12	0.38	20.76	20.38	35.80
2	2	318	E	49.50	174.45	15.41	90.64	-0.71	5.48	28.83	23.35	5.90
2	3	106	D	49.50	113.60	3.34	34.75	158.96	0.12	7.57	7.45	5.00
3	1	166	I	206.50	15.44	0.71	13.05	589.84	0.01	4.33	4.32	35.40
3	2	527	H	99.50	97.38	14.26	74.73	20.43	1.62	33.93	32.32	24.70
3	3	283	G	51.50	171.38	13.47	89.18	0.92	4.64	25.10	20.46	5.50
4	1	291	K	46.50	180.26	14.57	90.67	-0.73	5.41	26.91	21.50	5.30
4	2	178	J	46.50	130.38	6.45	62.13	44.87	0.69	13.53	12.84	5.80
Ped	1	9	L	8.50	140.49	0.35	3.14	9999.00	0.00	0.72	0.72	0.00

Sequence2; Objective: MAXIMUM CAPACITY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-2.48	104.18	104.18	147.6

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

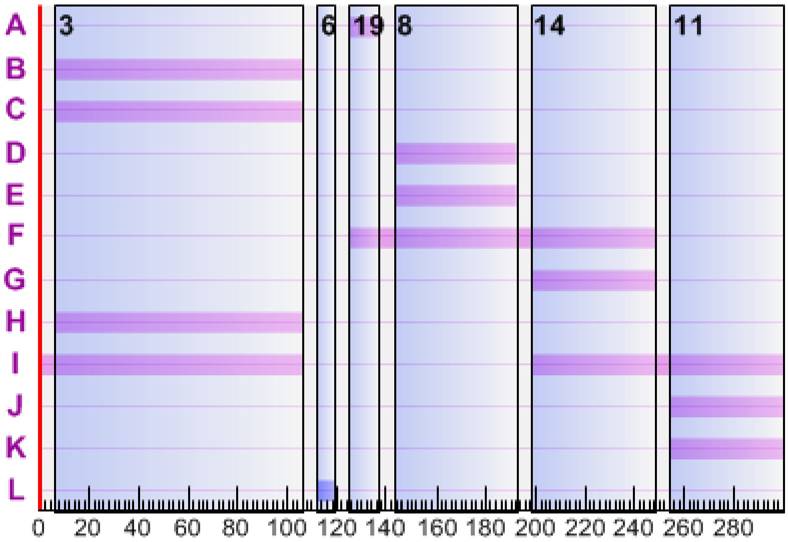
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	100.0	106.0
6	112.0	7.0	119.0
19	125.0	12.0	137.0
8	143.0	49.0	192.0
14	198.0	50.0	248.0
11	254.0	46.0	0.0

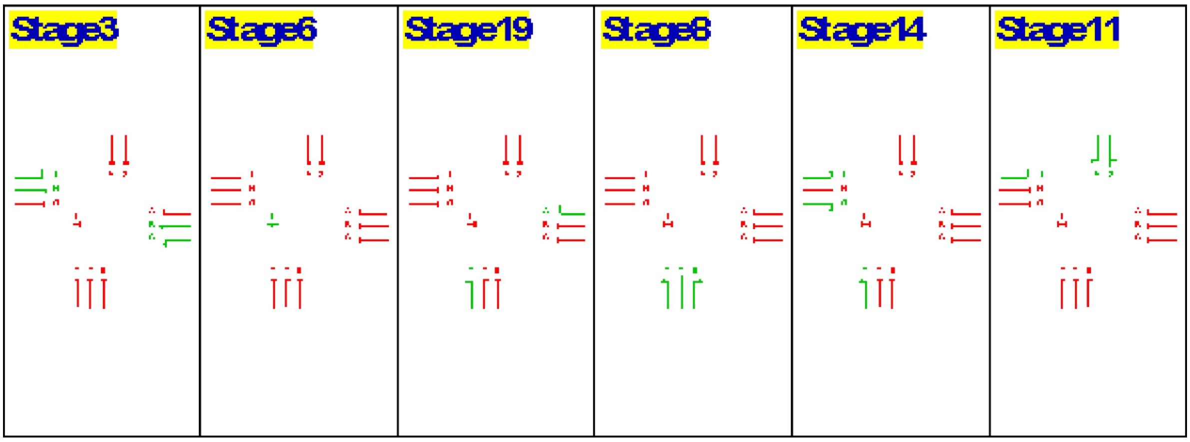
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	125	12.0	137						
B	6	100.0	106						
C	6	100.0	106						
D	143	49.0	192						
E	143	49.0	192						
F	125	123.0	248						
G	198	50.0	248						
H	6	100.0	106						
I	198	208.0	106						
J	254	46.0	0						
K	254	46.0	0						
L	112	7.0	119						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	38	C	101.50	67.31	0.71	6.14	9999.00	0.00	2.11	2.11	4.20
1	**2**	635	B	101.50	119.07	21.00	89.16	0.94	5.28	45.39	40.11	18.50
1	**3**	76	A	13.50	314.58	6.64	92.29	-2.48	4.62	10.76	6.14	1.00
2	**1**	392	F	124.50	68.65	7.48	51.62	74.36	0.39	21.13	20.74	35.20
2	**2**	318	E	50.50	171.05	15.11	89.74	0.29	5.00	28.53	23.54	6.00
2	**3**	106	D	50.50	114.16	3.36	34.41	161.55	0.12	7.63	7.51	5.10
3	**1**	166	I	209.50	15.29	0.71	12.99	592.86	0.01	4.33	4.32	35.60
3	**2**	527	H	101.50	96.94	14.19	74.00	21.63	1.54	34.02	32.48	25.40
3	**3**	283	G	51.50	177.28	13.94	90.08	-0.09	5.08	25.78	20.71	5.30
4	**1**	291	K	47.50	176.08	14.23	89.65	0.39	4.88	26.56	21.67	5.40
4	**2**	178	J	47.50	130.55	6.45	61.43	46.50	0.66	13.61	12.95	5.90
Ped	**1**	9	L	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence2; Objective: MINIMUM DELAY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
292.0	-1.05	102.63	102.63	145.6

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

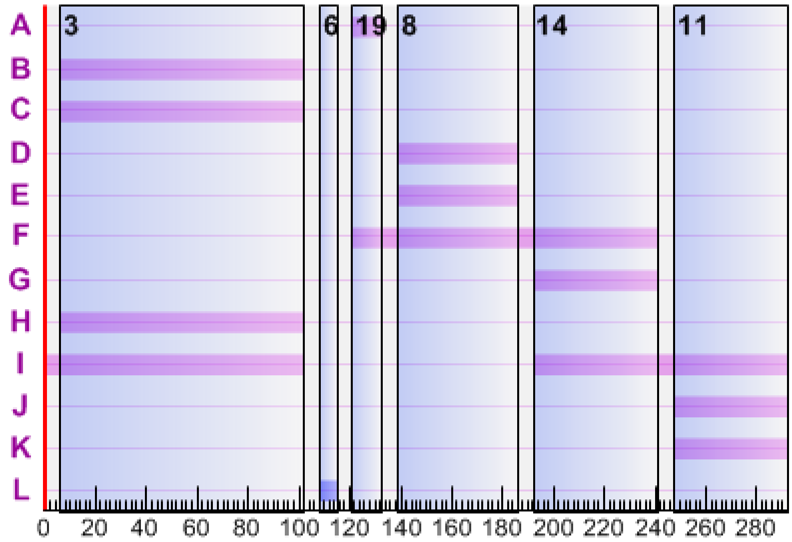
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
3	6.0	96.0	102.0
6	108.0	7.0	115.0
19	121.0	12.0	133.0
8	139.0	47.0	186.0
14	192.0	49.0	241.0
11	247.0	45.0	0.0

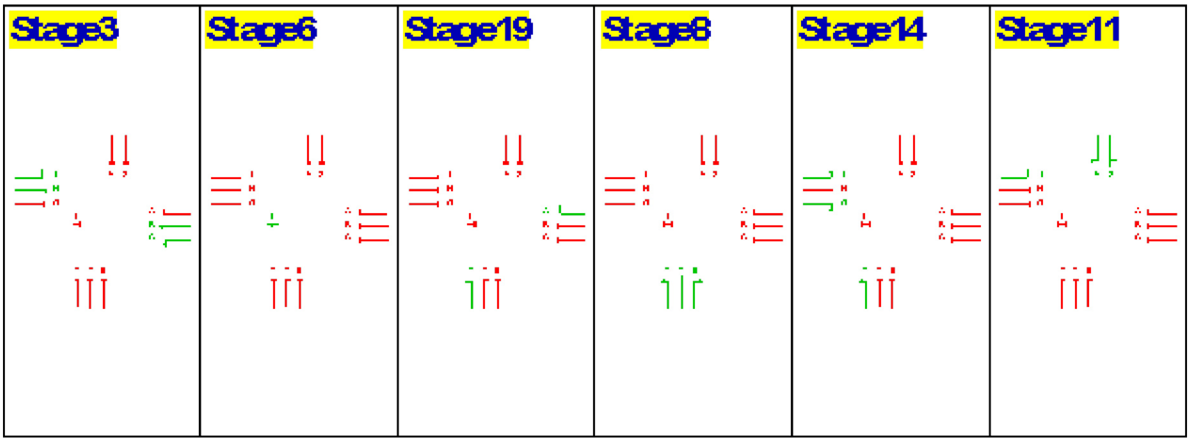
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	121	12.0	133						
B	6	96.0	102						
C	6	96.0	102						
D	139	47.0	186						
E	139	47.0	186						
F	121	120.0	241						
G	192	49.0	241						
H	6	96.0	102						
I	192	202.0	102						
J	247	45.0	0						
K	247	45.0	0						
L	108	7.0	115						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	38	C	97.50	66.41	0.70	6.22	9999.00	0.00	2.07	2.07	4.10
1	2	635	B	97.50	120.97	21.34	90.34	-0.38	6.01	45.31	39.30	17.40
1	3	76	A	13.50	287.46	6.07	89.83	0.19	3.84	9.81	5.97	1.10
2	1	392	F	121.50	66.65	7.26	51.48	74.82	0.39	20.54	20.14	35.40
2	2	318	E	48.50	174.11	15.38	90.95	-1.05	5.67	28.64	22.97	5.80
2	3	106	D	48.50	111.94	3.30	34.87	158.08	0.13	7.45	7.33	5.00
3	1	166	I	203.50	15.03	0.69	13.02	591.46	0.01	4.23	4.22	35.50
3	2	527	H	97.50	96.36	14.11	74.98	20.03	1.64	33.47	31.83	24.40
3	3	283	G	50.50	170.54	13.41	89.42	0.65	4.75	24.87	20.12	5.50
4	1	291	K	46.50	170.23	13.76	89.14	0.97	4.64	25.71	21.07	5.50
4	2	178	J	46.50	126.91	6.27	61.08	47.35	0.65	13.24	12.59	5.90
Ped	1	9	L	8.50	137.98	0.34	3.09	9999.00	0.00	0.71	0.71	0.00

Site 6 – Carrigmore Estate/Fortunestown Lane Priority Controlled Junction

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010) (Patch 15 Apr 2011)

Run with file:-
"S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\
Site 02\Site 02.vpi"
(drive-on-the-left) at 18:52:54 on Wednesday, 19 January 2022

RUN INFORMATION
****

```
RUN TITLE       : Site 02
LOCATION        :
DATE            : 14/05/21
CLIENT          : Kelland Homes Ltd & Durkan Group
ENUMERATOR      : ronan.kearns [SIMON-HP]
JOB NUMBER      :
STATUS          : TIA
DESCRIPTION     :
```

MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA

```
                    MAJOR ROAD (ARM C) --------------------- MAJOR ROAD (ARM A)
                                                I
                                                I
                                                I
                                                I
                                                I
                                                I
                                         MINOR ROAD (ARM B)
```

ARM A IS Fortunestown Lane - E
ARM B IS Carrigmore
ARM C IS Fortunestown Lane - W

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.60 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B) 70.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (2)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 70.0 M.
- VISIBILITY TO RIGHT	(VB-A) 70.0 M.
- LANE 1 WIDTH	(WB-C) 4.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: Survey AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.49	5.23	3.49
ARM B	15.00	45.00	75.00	1.75	2.63	1.75
ARM C	15.00	45.00	75.00	4.41	6.62	4.41

Demand set: Survey AM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)		
08.00 - 09.30	ARM A	0.000 0.0 (0.0)	0.108 30.0 (10.0)	0.892 249.0 (10.0)
	ARM B	0.814 114.0 (10.0)	0.000 0.0 (0.0)	0.186 26.0 (10.0)
	ARM C	0.941 332.0 (10.0)	0.059 21.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Survey AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	1.76	7.75	0.227		0.00	0.29	4.1		0.17
C-AB	0.26	8.54	0.031		0.00	0.03	0.5		0.12
A-B	0.38								
A-C	3.12								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	2.10	7.45	0.281		0.29	0.39	5.6		0.19
C-AB	0.31	8.38	0.038		0.03	0.04	0.6		0.12
A-B	0.45								
A-C	3.73								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	2.57	7.04	0.365		0.39	0.56	8.1		0.22
C-AB	0.39	8.18	0.047		0.04	0.05	0.7		0.13
A-B	0.55								
A-C	4.57								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	2.57	7.04	0.365		0.56	0.57	8.5		0.22
C-AB	0.39	8.18	0.047		0.05	0.05	0.7		0.13
A-B	0.55								
A-C	4.57								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	2.10	7.45	0.281		0.57	0.40	6.2		0.19
C-AB	0.31	8.38	0.038		0.05	0.04	0.6		0.12
A-B	0.45								
A-C	3.73								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.76	7.75	0.227		0.40	0.30	4.6		0.17
C-AB	0.26	8.54	0.031		0.04	0.03	0.5		0.12
A-B	0.38								
A-C	3.12								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.3	
08.30	0.4	
08.45	0.6	*
09.00	0.6	*
09.15	0.4	
09.30	0.3	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	192.7	128.5	37.1	0.19	37.1	0.19
C-AB	28.9	19.3	3.6	0.12	3.6	0.12
A-B	41.3	27.5				
A-C	342.7	228.5				
ALL	1062.6	708.4	40.7	0.04	40.7	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Base AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.66	9.99	6.66
ARM B	15.00	45.00	75.00	2.04	3.06	2.04
ARM C	15.00	45.00	75.00	7.88	11.81	7.88

Demand set: 2027 Base AM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
08.00 - 09.30	ARM A	0.000	0.077	0.923
		0.0	41.0	492.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.798	0.000	0.202
		130.0	0.0	33.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.948	0.052	0.000
		597.0	33.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Base AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	2.05	6.46	0.317		0.00	0.45	6.4		0.22
C-AB	0.41	7.83	0.053		0.00	0.06	0.8		0.13
A-B	0.51								
A-C	6.17								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	2.44	5.89	0.415		0.45	0.69	9.8		0.29
C-AB	0.49	7.54	0.066		0.06	0.07	1.1		0.14
A-B	0.61								
A-C	7.37								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	2.99	5.09	0.587		0.69	1.33	18.1		0.46
C-AB	0.61	7.14	0.085		0.07	0.09	1.4		0.15
A-B	0.75								
A-C	9.03								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	2.99	5.09	0.587		1.33	1.37	20.3		0.47
C-AB	0.61	7.14	0.085		0.09	0.09	1.4		0.15
A-B	0.75								
A-C	9.03								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	2.44	5.89	0.415		1.37	0.73	11.8		0.30
C-AB	0.49	7.54	0.066		0.09	0.07	1.1		0.14
A-B	0.61								
A-C	7.37								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	2.05	6.45	0.317		0.73	0.47	7.5		0.23
C-AB	0.41	7.83	0.053		0.07	0.06	0.8		0.13
A-B	0.51								
A-C	6.17								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.5	
08.30	0.7	*
08.45	1.3	*
09.00	1.4	*
09.15	0.7	*
09.30	0.5	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	224.4	149.6	73.8	0.33	73.8	0.33
C-AB	45.4	30.3	6.6	0.15	6.6	0.15
A-B	56.4	37.6				
A-C	677.2	451.5				
ALL	1825.1	1216.8	80.4	0.04	80.4	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Base + Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.88	10.31	6.88
ARM B	15.00	45.00	75.00	3.69	5.53	3.69
ARM C	15.00	45.00	75.00	8.18	12.26	8.18

Demand set: 2027 Base + Dev AM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.105	0.895
		0.0	58.0	492.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.698	0.000	0.302
		206.0	0.0	89.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.913	0.087	0.000
		597.0	57.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Base + Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	3.70	6.60	0.561		0.00	1.21	16.4		0.33
C-AB	0.72	7.78	0.092		0.00	0.10	1.5		0.14
A-B	0.73								
A-C	6.17								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	4.42	6.01	0.735		1.21	2.45	32.1		0.57
C-AB	0.85	7.49	0.114		0.10	0.13	1.9		0.15
A-B	0.87								
A-C	7.37								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	5.41	5.18	1.044		2.45	10.92	108.9		1.80
C-AB	1.05	7.07	0.148		0.13	0.18	2.7		0.17
A-B	1.06								
A-C	9.03								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	5.41	5.18	1.045		10.92	16.54	207.3		3.05
C-AB	1.05	7.07	0.148		0.18	0.18	2.7		0.17
A-B	1.06								
A-C	9.03								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	4.42	6.01	0.735		16.54	3.44	121.5		1.68
C-AB	0.85	7.49	0.114		0.18	0.13	2.0		0.15
A-B	0.87								
A-C	7.37								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	3.70	6.60	0.561		3.44	1.34	23.0		0.38
C-AB	0.72	7.78	0.092		0.13	0.10	1.5		0.14
A-B	0.73								
A-C	6.17								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.2	*
08.30	2.4	**
08.45	10.9	***********
09.00	16.5	*****************
09.15	3.4	***
09.30	1.3	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	406.0	270.7	509.1	1.25	509.3	1.25
C-AB	78.5	52.3	12.3	0.16	12.3	0.16
A-B	79.8	53.2				
A-C	677.2	451.5				
ALL	2063.3	1375.5	521.5	0.25	521.6	0.25

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Base AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.82	10.24	6.82
ARM B	15.00	45.00	75.00	2.13	3.19	2.13
ARM C	15.00	45.00	75.00	8.09	12.13	8.09

Demand set: 2032 Base AM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.077	0.923
		0.0	42.0	504.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.800	0.000	0.200
		136.0	0.0	34.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.947	0.053	0.000
		613.0	34.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Base AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	2.13	6.37	0.335		0.00	0.49	6.9		0.23
C-AB	0.43	7.79	0.055		0.00	0.06	0.9		0.14
A-B	0.53								
A-C	6.32								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	2.55	5.79	0.440		0.49	0.76	10.7		0.30
C-AB	0.51	7.50	0.068		0.06	0.07	1.1		0.14
A-B	0.63								
A-C	7.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	3.12	4.98	0.627		0.76	1.55	20.8		0.51
C-AB	0.62	7.09	0.088		0.07	0.10	1.4		0.15
A-B	0.77								
A-C	9.25								

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 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                               (RFC)   (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 08.45-09.00                                                                                                   I
 I   B-AC      3.12      4.97    0.627                1.55   1.61      23.8                              0.54      I
 I   C-AB      0.62      7.09    0.088                0.10   0.10       1.5                              0.15      I
 I   A-B       0.77                                                                                              I
 I   A-C       9.25                                                                                              I
 I                                                                                                               I

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 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                               (RFC)   (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 09.00-09.15                                                                                                   I
 I   B-AC      2.55      5.79    0.440                1.61   0.81      13.2                              0.32      I
 I   C-AB      0.51      7.50    0.068                0.10   0.07       1.1                              0.14      I
 I   A-B       0.63                                                                                              I
 I   A-C       7.55                                                                                              I
 I                                                                                                               I

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 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                               (RFC)   (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 09.15-09.30                                                                                                   I
 I   B-AC      2.13      6.37    0.335                0.81   0.51       8.1                              0.24      I
 I   C-AB      0.43      7.79    0.055                0.07   0.06       0.9                              0.14      I
 I   A-B       0.53                                                                                              I
 I   A-C       6.32                                                                                              I
 I                                                                                                               I

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*WARNING* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

 QUEUE FOR STREAM    B-AC
 -------------------------
  TIME          NO. OF
  SEGMENT       VEHICLES
  ENDING        IN QUEUE
   08.15           0.5
   08.30           0.8    *
   08.45           1.5    **
   09.00           1.6    **
   09.15           0.8    *
   09.30           0.5    *

 QUEUE FOR STREAM    C-AB
 -------------------------
  TIME          NO. OF
  SEGMENT       VEHICLES
  ENDING        IN QUEUE
   08.15           0.1
   08.30           0.1
   08.45           0.1
   09.00           0.1
   09.15           0.1
   09.30           0.1
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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	234.0	156.0	83.5	0.36	83.5	0.36
C-AB	46.8	31.2	6.8	0.15	6.8	0.15
A-B	57.8	38.5				
A-C	693.7	462.5				
ALL	1876.1	1250.7	90.3	0.05	90.3	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Base + Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.04	10.56	7.04
ARM B	15.00	45.00	75.00	3.78	5.66	3.78
ARM C	15.00	45.00	75.00	8.39	12.58	8.39

Demand set: 2032 Base + Dev AM

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.105	0.895
		0.0	59.0	504.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.699	0.000	0.301
		211.0	0.0	91.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.914	0.086	0.000
		613.0	58.0	0.0
		(10.0)	(10.0)	(0.0)

(TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S))

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Base + Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	3.79	6.53	0.581		0.00	1.31	17.6		0.34
C-AB	0.73	7.75	0.094		0.00	0.10	1.5		0.14
A-B	0.74								
A-C	6.32								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	4.52	5.92	0.764		1.31	2.77	35.8		0.63
C-AB	0.87	7.44	0.117		0.10	0.13	2.0		0.15
A-B	0.88								
A-C	7.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	5.54	5.07	1.093		2.77	13.57	130.3		2.13
C-AB	1.06	7.02	0.152		0.13	0.18	2.7		0.17
A-B	1.08								
A-C	9.25								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	5.54	5.07	1.094		13.57	21.91	267.1		3.86
C-AB	1.06	7.02	0.152		0.18	0.18	2.8		0.17
A-B	1.08								
A-C	9.25								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	4.52	5.92	0.764		21.91	5.02	200.4		2.58
C-AB	0.87	7.44	0.117		0.18	0.14	2.0		0.15
A-B	0.88								
A-C	7.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	3.79	6.52	0.581		5.02	1.47	27.3		0.43
C-AB	0.73	7.75	0.094		0.14	0.11	1.6		0.14
A-B	0.74								
A-C	6.32								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.3	*
08.30	2.8	***
08.45	13.6	**************
09.00	21.9	**********************
09.15	5.0	*****
09.30	1.5	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	415.7	277.1	678.6	1.63	678.7	1.63
C-AB	79.8	53.2	12.7	0.16	12.7	0.16
A-B	81.2	54.1				
A-C	693.7	462.5				
ALL	2114.2	1409.5	691.2	0.33	691.4	0.33

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Base AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.97	10.46	6.97
ARM B	15.00	45.00	75.00	2.20	3.30	2.20
ARM C	15.00	45.00	75.00	8.24	12.36	8.24

Demand set: 2042 Base AM

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
	ARM A	0.000	0.081	0.919
		0.0	45.0	513.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.807	0.000	0.193
		142.0	0.0	34.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.950	0.050	0.000
		626.0	33.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Base AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	2.21	6.30	0.350		0.00	0.53	7.4		0.24
C-AB	0.41	7.76	0.053		0.00	0.06	0.8		0.14
A-B	0.56								
A-C	6.44								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	2.64	5.71	0.462		0.53	0.83	11.7		0.32
C-AB	0.49	7.46	0.066		0.06	0.07	1.1		0.14
A-B	0.67								
A-C	7.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	3.23	4.88	0.662		0.83	1.77	23.5		0.56
C-AB	0.61	7.04	0.086		0.07	0.09	1.4		0.16
A-B	0.83								
A-C	9.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	3.23	4.88	0.662		1.77	1.86	27.3		0.60
C-AB	0.61	7.04	0.086		0.09	0.09	1.4		0.16
A-B	0.83								
A-C	9.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	2.64	5.71	0.462		1.86	0.89	14.6		0.34
C-AB	0.49	7.46	0.066		0.09	0.07	1.1		0.14
A-B	0.67								
A-C	7.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	2.21	6.30	0.350		0.89	0.55	8.7		0.25
C-AB	0.41	7.76	0.053		0.07	0.06	0.9		0.14
A-B	0.56								
A-C	6.44								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.5	*
08.30	0.8	*
08.45	1.8	**
09.00	1.9	**
09.15	0.9	*
09.30	0.6	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	242.3	161.5	93.1	0.38	93.2	0.38
C-AB	45.4	30.3	6.7	0.15	6.7	0.15
A-B	61.9	41.3				
A-C	706.1	470.7				
ALL	1917.4	1278.2	99.8	0.05	99.8	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Base + Dev AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.15	10.73	7.15
ARM B	15.00	45.00	75.00	3.55	5.32	3.55
ARM C	15.00	45.00	75.00	8.48	12.71	8.48

Demand set: 2042 Base + Dev AM

TIME	FROM/TO	ARM A	ARM B	ARM C
08.00 - 09.30				
	ARM A	0.000	0.103	0.897
		0.0	59.0	513.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.718	0.000	0.282
		204.0	0.0	80.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.923	0.077	0.000
		626.0	52.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Base + Dev AM
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-AC	3.56	6.44	0.553		0.00	1.18	15.9		0.33
C-AB	0.65	7.72	0.085		0.00	0.09	1.4		0.14
A-B	0.74								
A-C	6.44								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	4.26	5.83	0.730		1.18	2.38	31.3		0.58
C-AB	0.78	7.41	0.105		0.09	0.12	1.8		0.15
A-B	0.88								
A-C	7.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	5.21	4.97	1.049		2.38	10.85	107.8		1.86
C-AB	0.95	6.99	0.137		0.12	0.16	2.4		0.17
A-B	1.08								
A-C	9.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	5.21	4.97	1.049		10.85	16.54	206.7		3.16
C-AB	0.95	6.99	0.137		0.16	0.16	2.4		0.17
A-B	1.08								
A-C	9.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	4.26	5.83	0.730		16.54	3.36	121.4		1.73
C-AB	0.78	7.41	0.105		0.16	0.12	1.8		0.15
A-B	0.88								
A-C	7.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	3.56	6.44	0.553		3.36	1.30	22.3		0.38
C-AB	0.65	7.72	0.085		0.12	0.09	1.4		0.14
A-B	0.74								
A-C	6.44								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.2	*
08.30	2.4	**
08.45	10.9	***********
09.00	16.5	*****************
09.15	3.4	***
09.30	1.3	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	390.9	260.6	505.3	1.29	505.4	1.29
C-AB	71.6	47.7	11.2	0.16	11.2	0.16
A-B	81.2	54.1				
A-C	706.1	470.7				
ALL	2111.4	1407.6	516.5	0.24	516.6	0.24

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: Surevey PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	5.80	8.70	5.80
ARM B	15.00	45.00	75.00	0.80	1.20	0.80
ARM C	15.00	45.00	75.00	2.90	4.35	2.90

Demand set: Surevey PM

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.207	0.793
		0.0	96.0	368.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.828	0.000	0.172
		53.0	0.0	11.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.866	0.134	0.000
		201.0	31.0	0.0
		(10.0)	(10.0)	(0.0)

(Header: TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S))

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Surevey PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.80	7.45	0.108		0.00	0.12	1.7		0.15
C-AB	0.39	8.02	0.048		0.00	0.05	0.8		0.13
A-B	1.20								
A-C	4.62								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	0.96	7.10	0.135		0.12	0.15	2.3		0.16
C-AB	0.46	7.77	0.060		0.05	0.06	0.9		0.14
A-B	1.44								
A-C	5.51								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.17	6.61	0.178		0.15	0.21	3.1		0.18
C-AB	0.57	7.42	0.077		0.06	0.08	1.2		0.15
A-B	1.76								
A-C	6.75								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	1.17	6.61	0.178		0.21	0.21	3.2		0.18
C-AB	0.57	7.42	0.077		0.08	0.08	1.2		0.15
A-B	1.76								
A-C	6.75								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	0.96	7.10	0.135		0.21	0.16	2.4		0.16
C-AB	0.46	7.77	0.060		0.08	0.06	1.0		0.14
A-B	1.44								
A-C	5.51								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.80	7.45	0.108		0.16	0.12	1.9		0.15
C-AB	0.39	8.02	0.048		0.06	0.05	0.8		0.13
A-B	1.20								
A-C	4.62								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.2
18.30	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	88.1	58.7	14.6	0.17	14.6	0.17
C-AB	42.7	28.4	5.9	0.14	5.9	0.14
A-B	132.1	88.1				
A-C	506.5	337.7				
ALL	1046.1	697.4	20.5	0.02	20.5	0.02

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
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WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Base PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.06	12.09	8.06
ARM B	15.00	45.00	75.00	0.89	1.33	0.89
ARM C	15.00	45.00	75.00	4.29	6.43	4.29

Demand set: 2027 Base PM

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.164	0.836
		0.0	106.0	539.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.817	0.000	0.183
		58.0	0.0	13.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.901	0.099	0.000
		309.0	34.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Base PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.89	6.70	0.133		0.00	0.15	2.2		0.17
C-AB	0.43	7.52	0.057		0.00	0.06	0.9		0.14
A-B	1.33								
A-C	6.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.06	6.19	0.172		0.15	0.20	3.0		0.19
C-AB	0.51	7.17	0.071		0.06	0.08	1.1		0.15
A-B	1.59								
A-C	8.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.30	5.49	0.237		0.20	0.30	4.4		0.24
C-AB	0.62	6.69	0.093		0.08	0.10	1.5		0.16
A-B	1.95								
A-C	9.89								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	1.30	5.49	0.237		0.30	0.31	4.6		0.24
C-AB	0.62	6.69	0.093		0.10	0.10	1.6		0.16
A-B	1.95								
A-C	9.89								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	1.06	6.19	0.172		0.31	0.21	3.3		0.20
C-AB	0.51	7.17	0.071		0.10	0.08	1.2		0.15
A-B	1.59								
A-C	8.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.89	6.70	0.133		0.21	0.16	2.4		0.17
C-AB	0.43	7.52	0.057		0.08	0.06	0.9		0.14
A-B	1.33								
A-C	6.76								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.3
18.00	0.3
18.15	0.2
18.30	0.2

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	97.7	65.2	19.8	0.20	19.8	0.20
C-AB	46.8	31.2	7.2	0.15	7.2	0.15
A-B	145.9	97.3				
A-C	741.9	494.6				
ALL	1457.6	971.8	27.0	0.02	27.0	0.02

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2027 Base + Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.88	13.31	8.88
ARM B	15.00	45.00	75.00	1.45	2.18	1.45
ARM C	15.00	45.00	75.00	4.74	7.11	4.74

Demand set: 2027 Base + Dev PM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.241	0.759
		0.0	171.0	539.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.638	0.000	0.362
		74.0	0.0	42.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.815	0.185	0.000
		309.0	70.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2027 Base + Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	1.46	6.91	0.211		0.00	0.26	3.8		0.18
C-AB	0.88	7.34	0.120		0.00	0.14	2.0		0.15
A-B	2.15								
A-C	6.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.74	6.36	0.273		0.26	0.37	5.3		0.22
C-AB	1.05	6.95	0.151		0.14	0.18	2.7		0.17
A-B	2.56								
A-C	8.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	2.13	5.60	0.380		0.37	0.60	8.5		0.29
C-AB	1.28	6.42	0.200		0.18	0.25	3.8		0.19
A-B	3.14								
A-C	9.89								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	2.13	5.60	0.380		0.60	0.60	9.0		0.29
C-AB	1.28	6.42	0.200		0.25	0.26	3.9		0.19
A-B	3.14								
A-C	9.89								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	1.74	6.36	0.273		0.60	0.38	6.0		0.22
C-AB	1.05	6.95	0.151		0.26	0.18	2.7		0.17
A-B	2.56								
A-C	8.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	1.46	6.90	0.211		0.38	0.27	4.2		0.18
C-AB	0.88	7.34	0.120		0.18	0.14	2.1		0.15
A-B	2.15								
A-C	6.76								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.3	
17.30	0.4	
17.45	0.6	*
18.00	0.6	*
18.15	0.4	
18.30	0.3	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.2
17.45	0.3
18.00	0.3
18.15	0.2
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	159.7	106.4	36.8	0.23	36.8	0.23
C-AB	96.3	64.2	17.2	0.18	17.2	0.18
A-B	235.4	156.9				
A-C	741.9	494.6				
ALL	1658.6	1105.7	54.0	0.03	54.0	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Base PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.35	12.53	8.35
ARM B	15.00	45.00	75.00	0.94	1.41	0.94
ARM C	15.00	45.00	75.00	4.43	6.64	4.43

Demand set: 2032 Base PM

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.166	0.834
		0.0	111.0	557.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.813	0.000	0.187
		61.0	0.0	14.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.898	0.102	0.000
		318.0	36.0	0.0
		(10.0)	(10.0)	(0.0)

(Header: TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S))

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Base PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.94	6.62	0.142		0.00	0.16	2.3		0.18
C-AB	0.45	7.45	0.061		0.00	0.06	0.9		0.14
A-B	1.39								
A-C	6.99								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.12	6.10	0.184		0.16	0.22	3.2		0.20
C-AB	0.54	7.09	0.076		0.06	0.08	1.2		0.15
A-B	1.66								
A-C	8.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.38	5.37	0.256		0.22	0.34	4.8		0.25
C-AB	0.66	6.60	0.100		0.08	0.11	1.7		0.17
A-B	2.04								
A-C	10.22								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	1.38	5.37	0.256		0.34	0.34	5.1		0.25
C-AB	0.66	6.60	0.100		0.11	0.11	1.7		0.17
A-B	2.04								
A-C	10.22								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	1.12	6.09	0.184		0.34	0.23	3.6		0.20
C-AB	0.54	7.09	0.076		0.11	0.08	1.3		0.15
A-B	1.66								
A-C	8.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.94	6.62	0.142		0.23	0.17	2.6		0.18
C-AB	0.45	7.45	0.061		0.08	0.07	1.0		0.14
A-B	1.39								
A-C	6.99								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.3
18.00	0.3
18.15	0.2
18.30	0.2

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	103.2	68.8	21.7	0.21	21.7	0.21
C-AB	49.6	33.0	7.8	0.16	7.8	0.16
A-B	152.8	101.9				
A-C	766.7	511.1				
ALL	1509.9	1006.6	29.5	0.02	29.5	0.02

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2032 Base + Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.16	13.74	9.16
ARM B	15.00	45.00	75.00	1.48	2.21	1.48
ARM C	15.00	45.00	75.00	4.88	7.31	4.88

Demand set: 2032 Base + Dev PM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.240	0.760
		0.0	176.0	557.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.644	0.000	0.356
		76.0	0.0	42.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.815	0.185	0.000
		318.0	72.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 Base + Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	1.48	6.80	0.218		0.00	0.27	3.9		0.19
C-AB	0.90	7.27	0.124		0.00	0.14	2.1		0.16
A-B	2.21								
A-C	6.99								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.77	6.24	0.283		0.27	0.39	5.6		0.22
C-AB	1.08	6.88	0.157		0.14	0.19	2.8		0.17
A-B	2.64								
A-C	8.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	2.17	5.45	0.397		0.39	0.64	9.0		0.30
C-AB	1.32	6.33	0.209		0.19	0.27	4.0		0.20
A-B	3.23								
A-C	10.22								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	2.17	5.45	0.398		0.64	0.65	9.7		0.30
C-AB	1.32	6.33	0.209		0.27	0.27	4.1		0.20
A-B	3.23								
A-C	10.22								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	1.77	6.24	0.284		0.65	0.40	6.4		0.23
C-AB	1.08	6.88	0.157		0.27	0.19	2.9		0.17
A-B	2.64								
A-C	8.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	1.48	6.80	0.218		0.40	0.28	4.4		0.19
C-AB	0.90	7.27	0.124		0.19	0.14	2.2		0.16
A-B	2.21								
A-C	6.99								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.3	
17.30	0.4	
17.45	0.6	*
18.00	0.6	*
18.15	0.4	
18.30	0.3	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.2
17.45	0.3
18.00	0.3
18.15	0.2
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	162.4	108.3	39.0	0.24	39.0	0.24
C-AB	99.1	66.1	18.1	0.18	18.1	0.18
A-B	242.3	161.5				
A-C	766.7	511.1				
ALL	1708.1	1138.8	57.1	0.03	57.1	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Base PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.57	12.86	8.57
ARM B	15.00	45.00	75.00	0.96	1.44	0.96
ARM C	15.00	45.00	75.00	4.54	6.81	4.54

Demand set: 2042 Base PM

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)		
17.00 - 18.30	ARM A	0.000	0.168	0.832
		0.0	115.0	571.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.818	0.000	0.182
		63.0	0.0	14.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.898	0.102	0.000
		326.0	37.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Base PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	0.97	6.54	0.148		0.00	0.17	2.4		0.18
C-AB	0.46	7.40	0.063		0.00	0.07	1.0		0.14
A-B	1.44								
A-C	7.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.15	6.00	0.192		0.17	0.23	3.4		0.21
C-AB	0.55	7.03	0.079		0.07	0.08	1.3		0.15
A-B	1.72								
A-C	8.56								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.41	5.26	0.269		0.23	0.36	5.2		0.26
C-AB	0.68	6.52	0.104		0.08	0.12	1.7		0.17
A-B	2.11								
A-C	10.48								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	1.41	5.26	0.269		0.36	0.36	5.4		0.26
C-AB	0.68	6.52	0.104		0.12	0.12	1.8		0.17
A-B	2.11								
A-C	10.48								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	1.15	6.00	0.192		0.36	0.24	3.8		0.21
C-AB	0.55	7.03	0.079		0.12	0.09	1.3		0.15
A-B	1.72								
A-C	8.56								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	0.97	6.54	0.148		0.24	0.18	2.7		0.18
C-AB	0.46	7.40	0.063		0.09	0.07	1.0		0.14
A-B	1.44								
A-C	7.16								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.4
18.00	0.4
18.15	0.2
18.30	0.2

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
B-AC	106.0	70.7	22.9	0.22	22.9	0.22
C-AB	50.9	34.0	8.1	0.16	8.1	0.16
A-B	158.3	105.5				
A-C	785.9	524.0				
ALL	1549.9	1033.2	31.0	0.02	31.0	0.02

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
734.88	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
588.80	0.25	0.10	0.16	0.36

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
614.50	0.22	0.22

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2042 Base + Dev PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.23	13.84	9.23
ARM B	15.00	45.00	75.00	1.41	2.12	1.41
ARM C	15.00	45.00	75.00	4.89	7.33	4.89

Demand set: 2042 Base + Dev PM

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30				
	ARM A	0.000	0.226	0.774
		0.0	167.0	571.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.673	0.000	0.327
		76.0	0.0	37.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.834	0.166	0.000
		326.0	65.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2042 Base + Dev PM
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	1.42	6.71	0.211		0.00	0.26	3.8		0.19
C-AB	0.82	7.26	0.112		0.00	0.13	1.9		0.15
A-B	2.10								
A-C	7.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.69	6.14	0.276		0.26	0.37	5.4		0.22
C-AB	0.97	6.86	0.142		0.13	0.17	2.5		0.17
A-B	2.50								
A-C	8.56								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	2.07	5.34	0.388		0.37	0.62	8.7		0.30
C-AB	1.19	6.31	0.189		0.17	0.24	3.6		0.20
A-B	3.06								
A-C	10.48								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	2.07	5.34	0.388		0.62	0.62	9.3		0.31
C-AB	1.19	6.31	0.189		0.24	0.24	3.6		0.20
A-B	3.06								
A-C	10.48								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	1.69	6.13	0.276		0.62	0.39	6.1		0.23
C-AB	0.97	6.86	0.142		0.24	0.17	2.6		0.17
A-B	2.50								
A-C	8.56								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-AC	1.42	6.70	0.212		0.39	0.27	4.2		0.19
C-AB	0.82	7.26	0.112		0.17	0.13	1.9		0.16
A-B	2.10								
A-C	7.16								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.3	
17.30	0.4	
17.45	0.6	*
18.00	0.6	*
18.15	0.4	
18.30	0.3	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.2
18.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	155.5	103.7	37.5	0.24	37.5	0.24
C-AB	89.5	59.6	16.0	0.18	16.0	0.18
A-B	229.9	153.2				
A-C	785.9	524.0				
ALL	1709.5	1139.7	53.6	0.03	53.6	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

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Printed at 18:53:21 on 19/01/2022]

Site 7 – Church Road/Fortunestown Signal Controlled Junction

OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009

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File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 03\Site 03 AM.osc
Report generation date: 19/01/2022 18:54:21

Summary

File Description

Title	Site 03
Date	13/05/2021
Location	
Driving Side	Left
Identifier	
Client	
Jobnumber	
Enumerator	ronan.kearns [SIMON-HP]
Status	(new file)
Description	

Run Options

Run Evaluation Set	No
Evaluation Only	No
Optimise Critical Cycle TimeOnly	No
Use Horizontal Queues	Yes
Favour Continuous Green	No
Phase Timings Fuzziness (s)	0.5
Integer Phase Timings	Yes
Phase Snapping Distance (s)	0
Automatic Lane Turning Props	Yes
Automatic Vehicle Props	No

Geometry

Arms

Arm	Name	Exit Width (m)	Approach Speed (kph)	Exit Speed (kph)	Speed Limit (kph)	Stagger Distance (m)
1	(Arm name)	50.0	10	10	80	0
2	(Arm name)	50.0	10	10	80	0
3	(Arm name)	50.0	10	10	80	0

Traffic Streams

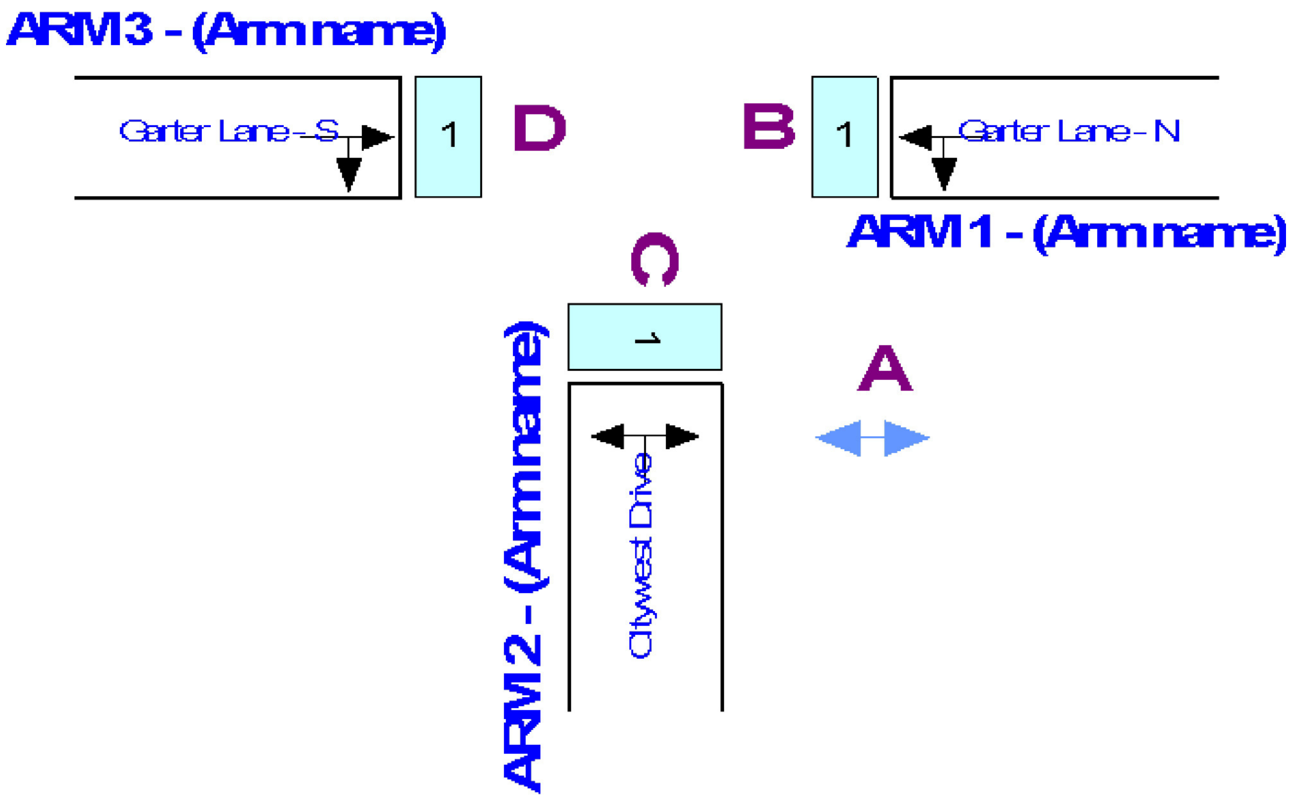
Arm	Traffic Stream	Type	Name	Sat Flow (PCU/hr)	Estimate Sat Flow	Sat Flow 2 (PCU/hr)	Green Phase	Arrow Phase
1	**1**	Traffic		1998	Yes	0	B	-
2	**1**	Traffic		1939	Yes	0	C	-
3	**1**	Traffic		1990	Yes	0	D	-
(Ped)	**1**	Pedestrian		10000	Yes	0	A	-

Arm	Traffic Stream	Relative Start Displacement (s)	Relative End Displacement (s)	Max Deg Sat (%)	Delay Weight (%)	Max Queue (PCU)	Initial Queue (PCU)	Average PCU Per Veh	Heavy Vehicles Percentage
1	**1**	0.0	0.0	90	100	0	0.0	1.10	0
2	**1**	0.0	0.0	90	100	0	0.0	1.10	0
3	**1**	0.0	0.0	90	100	0	0.0	1.10	0
(Ped)	**1**	0.0	0.0	90	100	0	0.0	-	0

Lanes

Arm	Traffic Stream	Lane	Name	Nearside Dest Arm	Straight Dest Arm	Offside Dest Arm	Proportion That Turn	Turning Radius (m)	IsNearside Lane	Width (m)	Gradient (%)	Short Lane Storage (PCU)
1	**1**	**1**	Garter Lane - N	2	3		0.44	10	No	3.75	0.0	0
2	**1**	**1**	Citywest Drive	1		3	1.00	10	No	4.75	0.0	0
3	**1**	**1**	Garter Lane - S		1	2	0.47	10	No	3.75	0.0	0

Junction Diagram



Signals

Signals

Max Cycle Time (s)	300
Fixed Cycle Time (s)	0
Evaluation Cycle Time (s)	0
Start Displacement (s)	1.4
End Displacement (s)	2.9

Phases

Phase	Name	Type	Associated Phase	Phase Min Green (s)	Phase Max Green (s)	Double Green
A	(Name)	Pedestrian	-	7.0	0.0	No
B	(Name)	Traffic	-	7.0	0.0	No
C	(Name)	Traffic	-	7.0	0.0	No
D	(Name)	Traffic	-	7.0	0.0	No

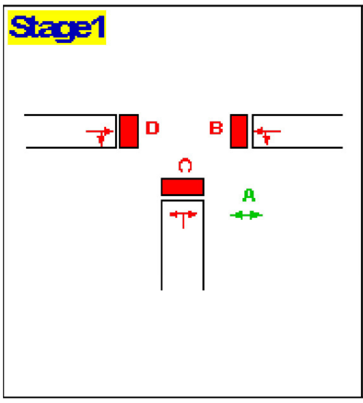
Intergreen Matrix

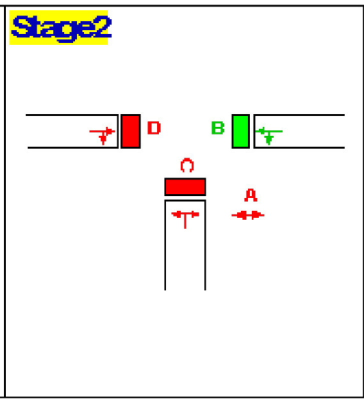
		To			
		A	**B**	**C**	**D**
From	**A**	-	6	6	6
	B	6	-	6	6
	C	6	6	-	6
	D	6	6	6	-

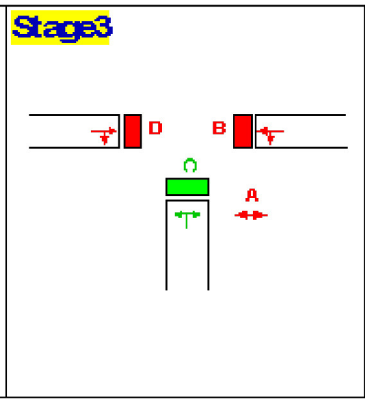
Stages

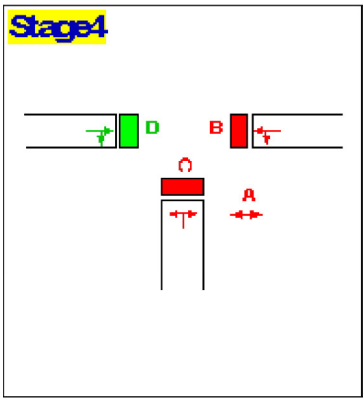
Stage	Stage Min Green (s)	Phases In This Stage	Use To Generate Sequences
1	-1	A	Yes
2	-1	B	Yes
3	-1	C	Yes
4	-1	D	Yes

Stage Diagrams









Sequences

Sequence	Name	Stages In This Sequence
1		1,2,3,4
2		1,4,3,2
3		1,3,2,4
4		1,4,2,3
5		1,2,4,3
6		1,3,4,2

Constraints

(No constraints)

Traffic

Note:*Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

Configuration

Traffic Scaling Factor	1.00
Time Period (min)	90
Time Segment Length (min)	15
Signal Optimiser Flows	Average
PCUs per Heavy Vehicle	2.00

Demand Sets

Name	Selected	Time Start	Time End	Profile Type	Use Relationship	Relationship
Survey	No	08:00	09:30	ODTAB	No	D1
2027 Base	No	08:00	09:30	ODTAB	No	D1
2027 Base + Dev	No	08:00	09:30	ODTAB	No	D1
2032 Base	No	08:00	09:30	ODTAB	No	D1
2032 Base + Dev	No	08:00	09:30	ODTAB	No	D1
2042 Base	No	08:00	09:30	ODTAB	No	D1
2042 Base + Dev	Yes	08:00	09:30	ODTAB	No	D1

Demand Set7 - 2042 Base + Dev

ODTAB Data (PCU/hr during central 60 min peak period)

		To		
		Arm 1	Arm 2	Arm 3
From	Arm 1	-	254	186
	Arm 2	321	-	457
	Arm 3	387	543	-

Average pedestrian flow on each pedestrian stream (if applicable): 10 ped/hr

Traffic flows (PCU/hr)

Arm	Traffic Stream	Phase	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:15-09:30
1 - (Arm name)	1	B	330	394	483	483	394	330
2 - (Arm name)	1	C	584	697	853	853	697	584
3 - (Arm name)	1	D	698	833	1020	1020	833	698
Pedestrians	1	A	8	9	11	11	9	8

Turning Proportions

Arm	Left Movement Percentage	Straight Movement Percentage	Right Movement Percentage
1 - (Arm name)	58	42	-
2 - (Arm name)	59	-	41
3 - (Arm name)	-	42	58

Accident Prediction

3-arm urban accident model

ABFlow (AADTx1000)	0.0
ACFlow (AADTx1000)	0.0
BAFlow (AADTx1000)	0.0
BCFlow (AADTx1000)	0.0
CAFlow (AADTx1000)	0.0
CBFlow (AADTx1000)	0.0
PedAFlow (Pedx1000/12hr)	0.0
PedBFlow (Pedx1000/12hr)	0.0
PedCFlow (Pedx1000/12hr)	0.0
IsInLondon	No
ADistToNextJunction (m)	0
BDistToNextJunction (m)	0
XXCDistToNextJunction (m)	0
SignalsComplex	No

Note:*'AB Flow' is flow from Arm A to Arm B, where arms are labelled clockwise.*

Traffic Calming

Number	Type	OriginalMeanSpeed (kph)	Separation (m)	Width (m)	Length (m)
1	None	20	20	1.0	1.0
2	None	20	20	1.0	1.0
3	None	20	20	1.0	1.0
4	None	20	20	1.0	1.0

Note:*Speeds/distances are ignored if no traffic calming measures are present.*

3-armurban accident model results

Vehicle only accidents:	0.00accidents per year
Pedestrian only accidents:	0.00accidents per year
Total fatal casualties:	0.00casualties per year
Total serious casualties:	0.00casualties per year
Total slight casualties:	0.00casualties per year

Results

***Note:**Duplicate solutions are not shown.*

Sequence1; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

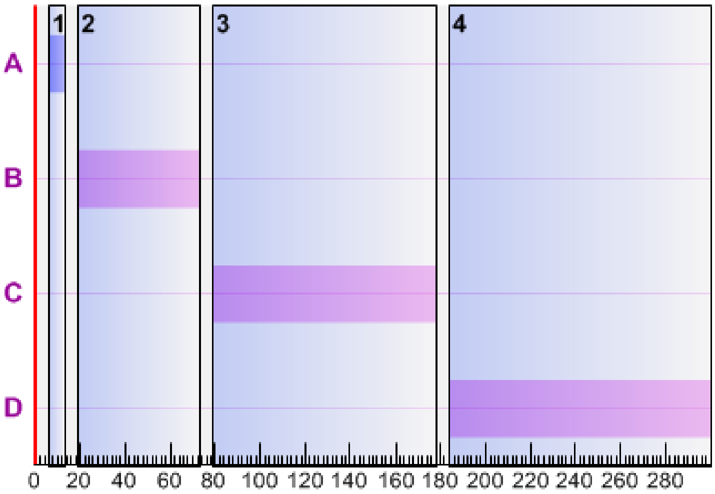
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	54.0	73.0
3	79.0	99.0	178.0
4	184.0	116.0	0.0

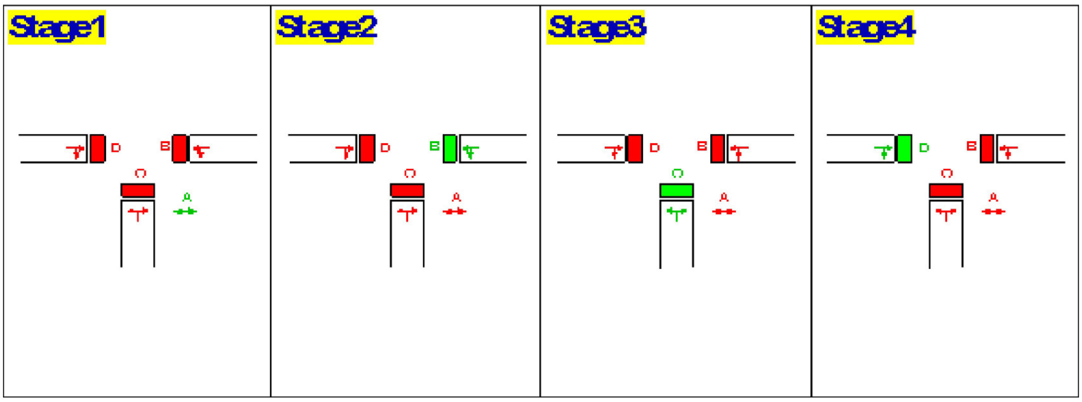
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	54.0	73						
C	79	99.0	178						
D	184	116.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence1; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

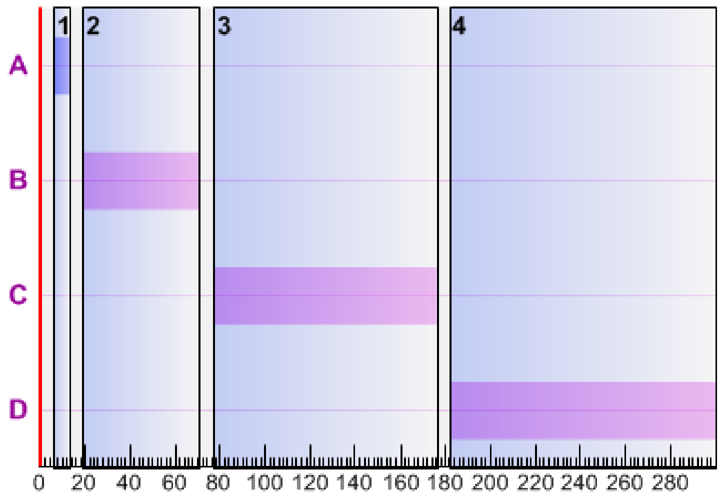
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	52.0	71.0
3	77.0	99.0	176.0
4	182.0	118.0	0.0

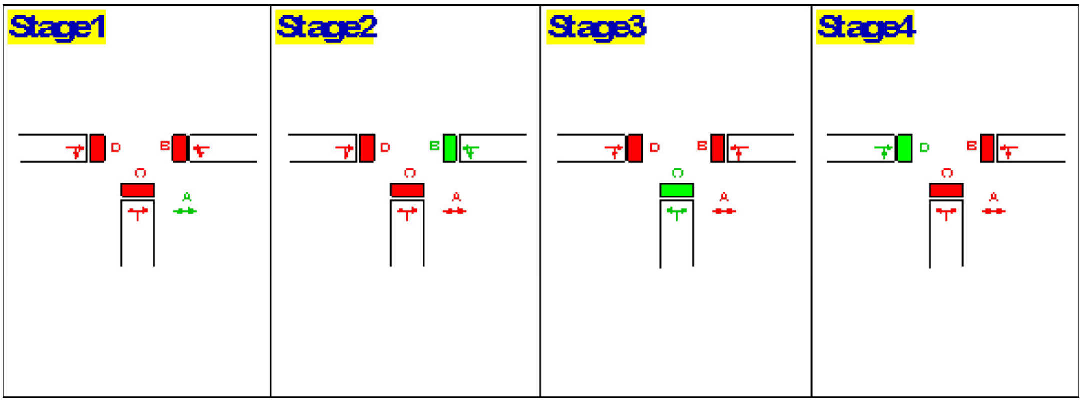
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	52.0	71						
C	77	99.0	176						
D	182	118.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence2; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

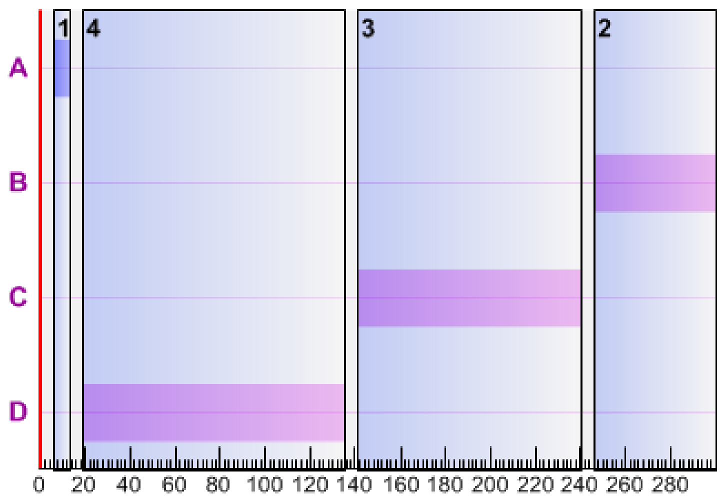
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	116.0	135.0
3	141.0	99.0	240.0
2	246.0	54.0	0.0

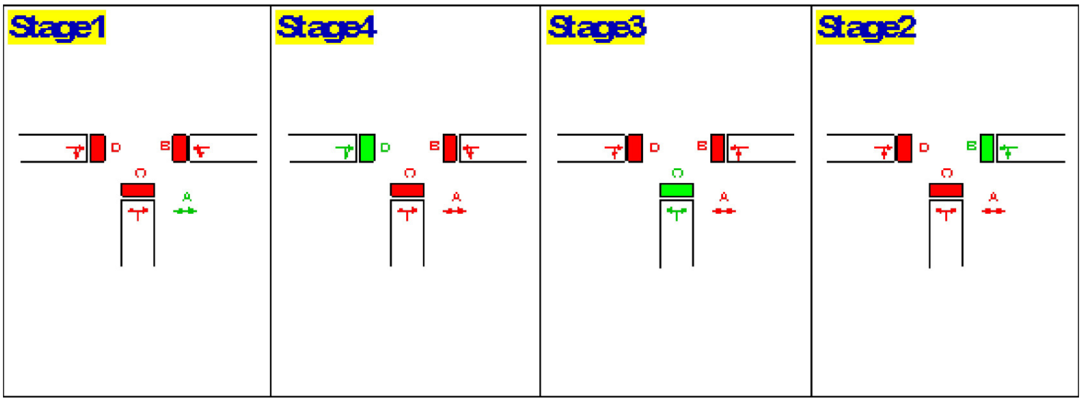
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	246	54.0	0						
C	141	99.0	240						
D	19	116.0	135						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence2; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

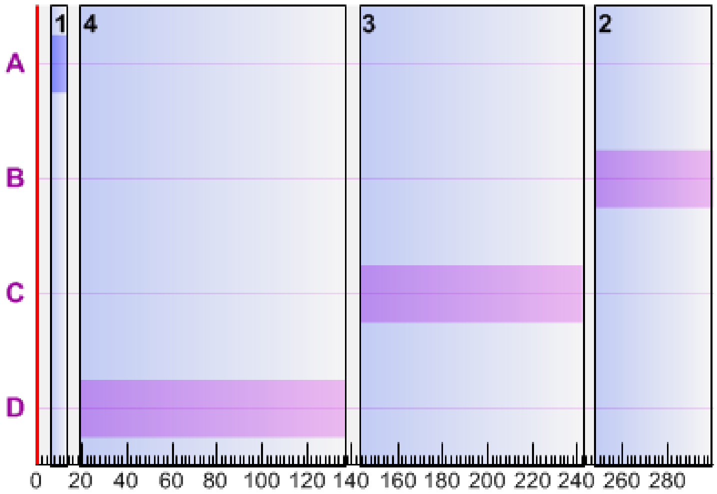
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	118.0	137.0
3	143.0	99.0	242.0
2	248.0	52.0	0.0

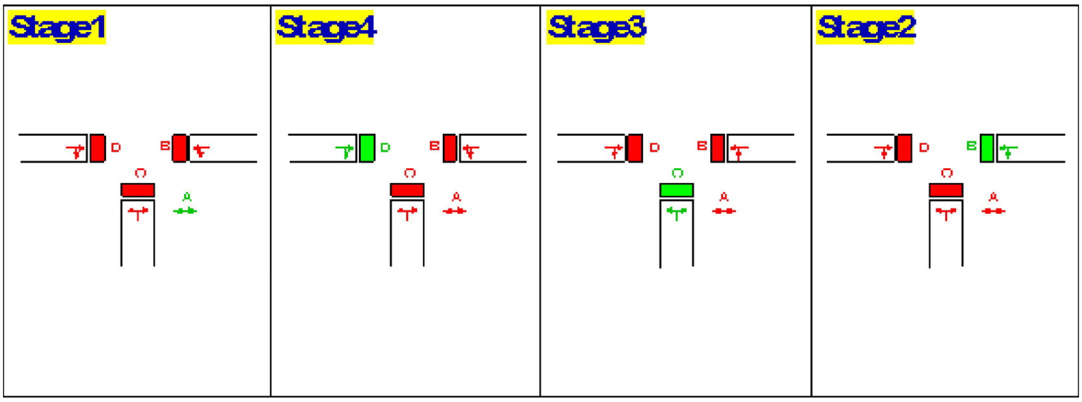
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	248	52.0	0						
C	143	99.0	242						
D	19	118.0	137						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence3; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

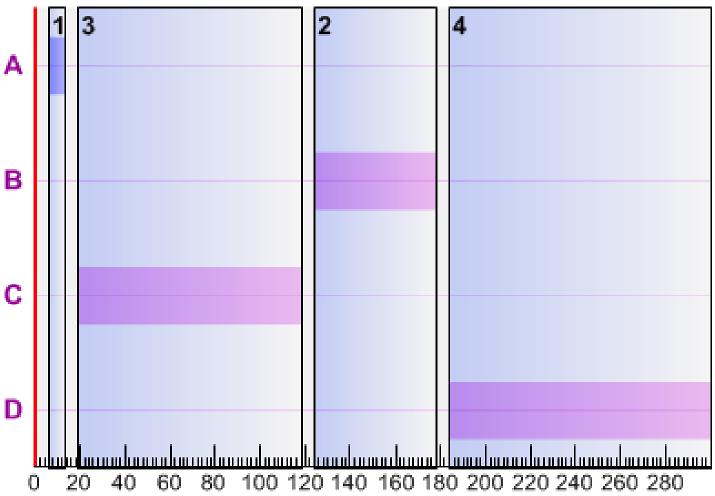
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
2	124.0	54.0	178.0
4	184.0	116.0	0.0

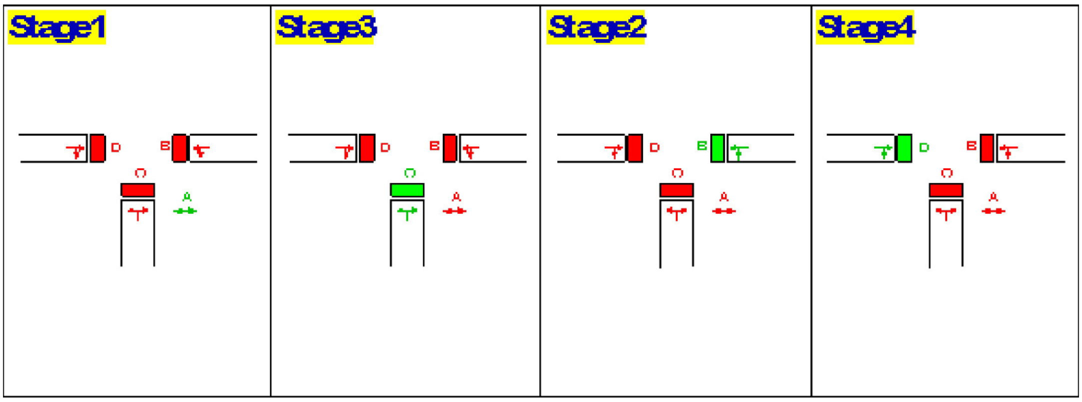
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	124	54.0	178						
C	19	99.0	118						
D	184	116.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence3; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

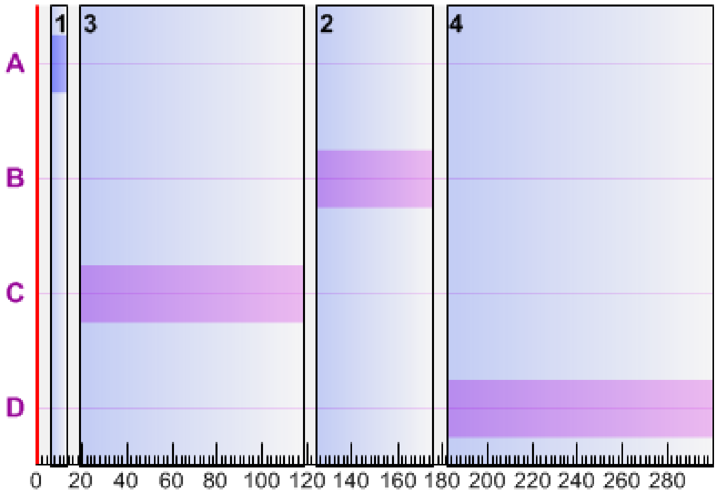
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
2	124.0	52.0	176.0
4	182.0	118.0	0.0

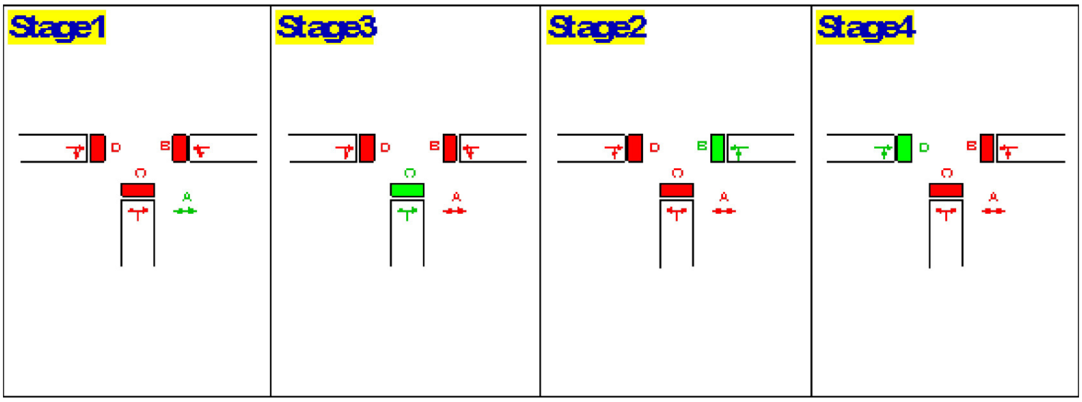
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	124	52.0	176						
C	19	99.0	118						
D	182	118.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence4; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

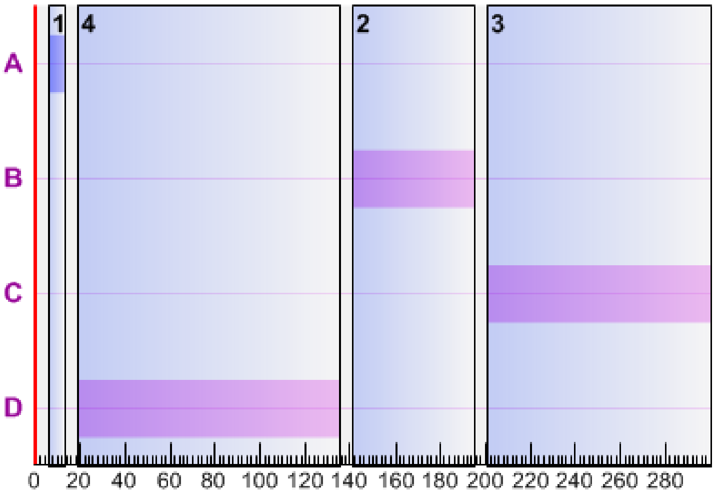
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	116.0	135.0
2	141.0	54.0	195.0
3	201.0	99.0	0.0

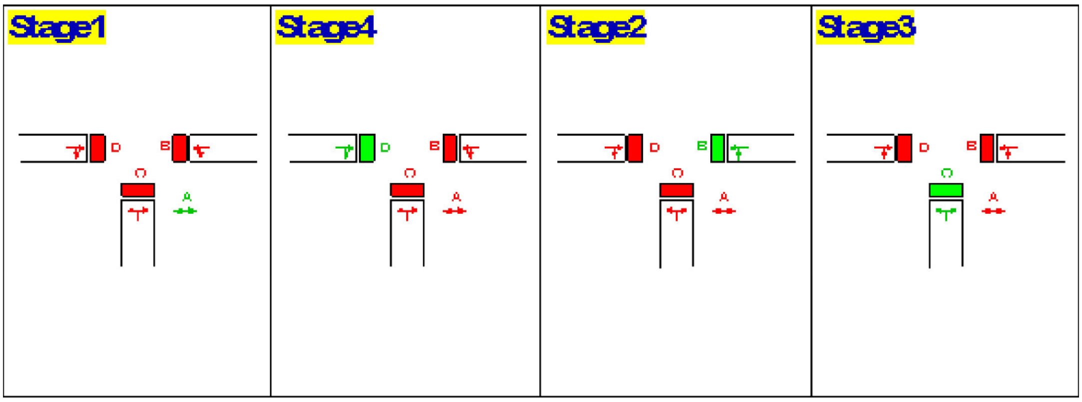
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	141	54.0	195						
C	201	99.0	0						
D	19	116.0	135						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence4; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

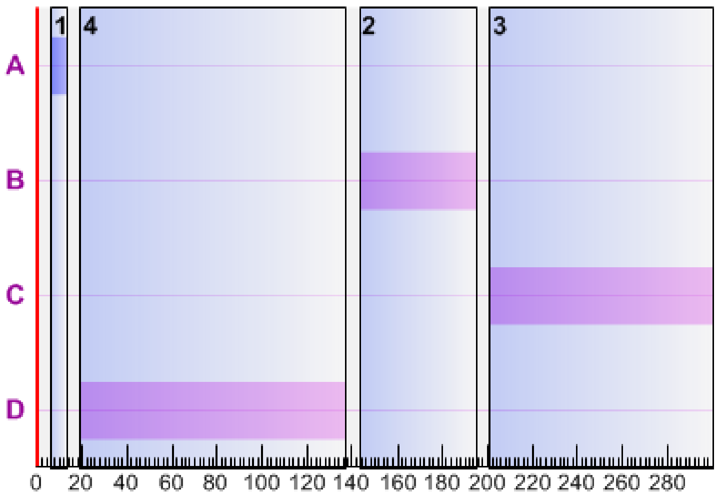
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	118.0	137.0
2	143.0	52.0	195.0
3	201.0	99.0	0.0

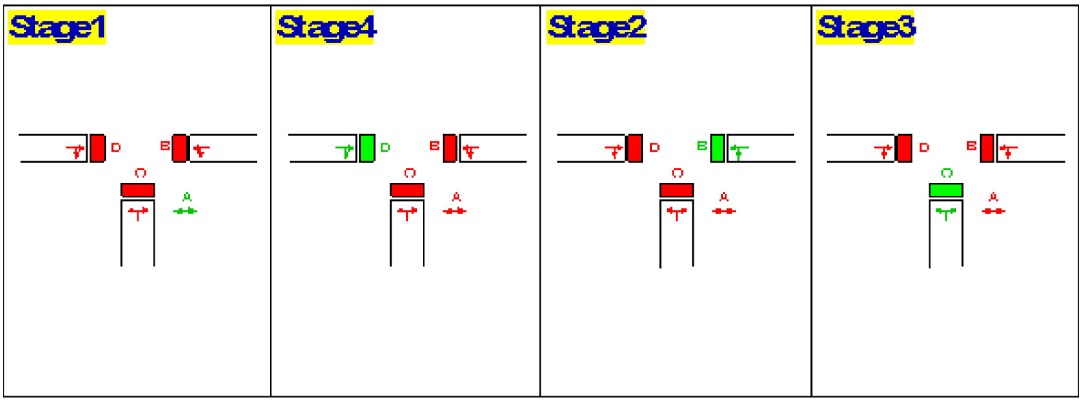
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	143	52.0	195						
C	201	99.0	0						
D	19	118.0	137						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence5; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

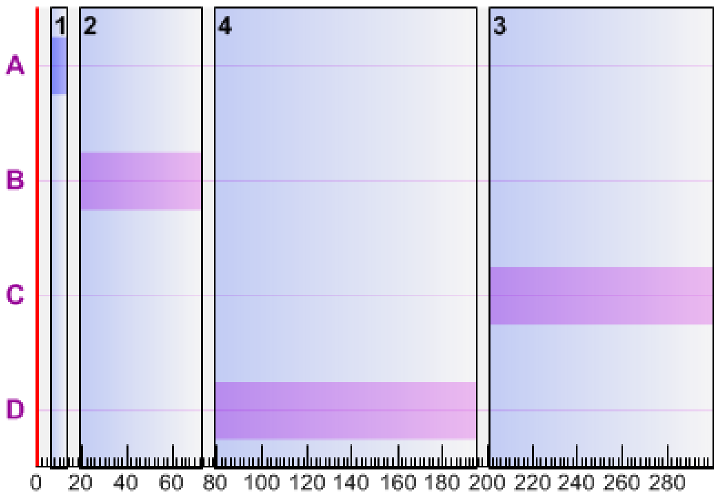
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	54.0	73.0
4	79.0	116.0	195.0
3	201.0	99.0	0.0

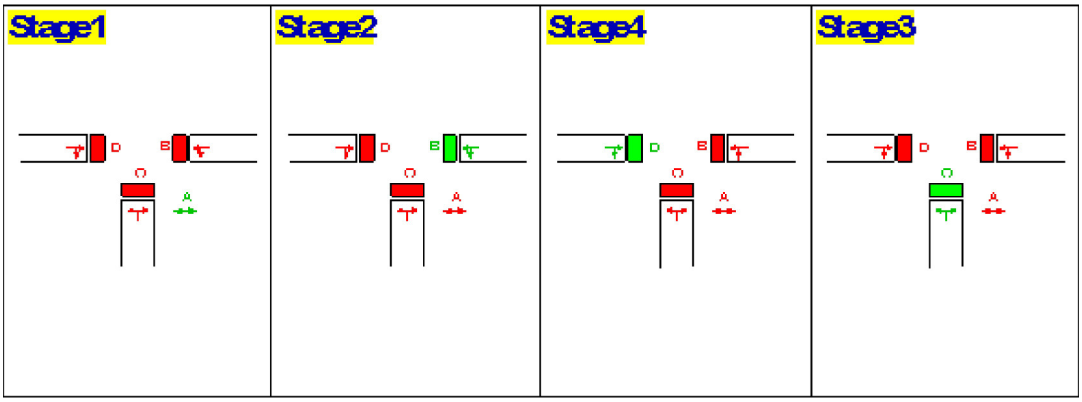
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	54.0	73						
C	201	99.0	0						
D	79	116.0	195						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence5; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

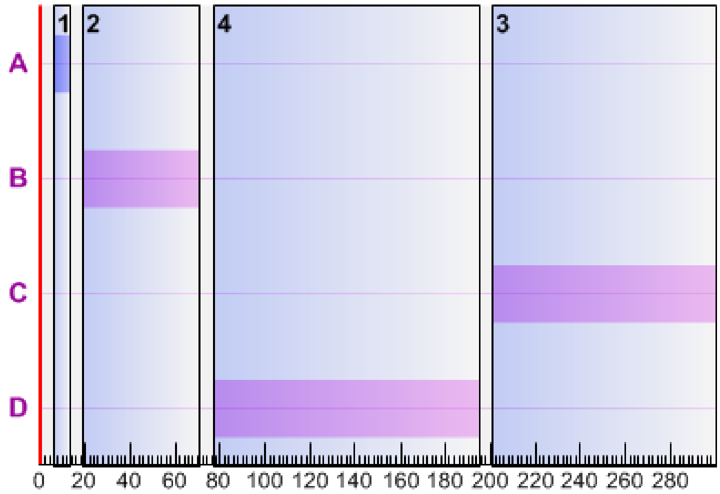
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	52.0	71.0
4	77.0	118.0	195.0
3	201.0	99.0	0.0

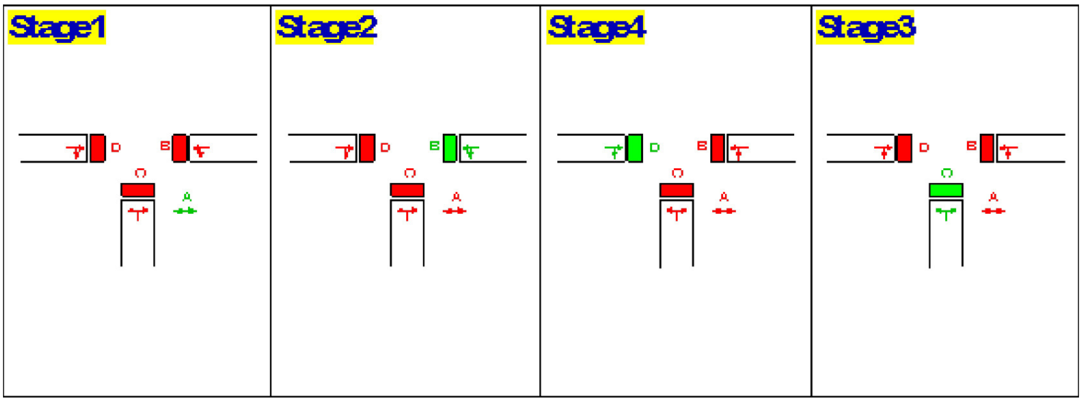
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	52.0	71						
C	201	99.0	0						
D	77	118.0	195						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence6; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

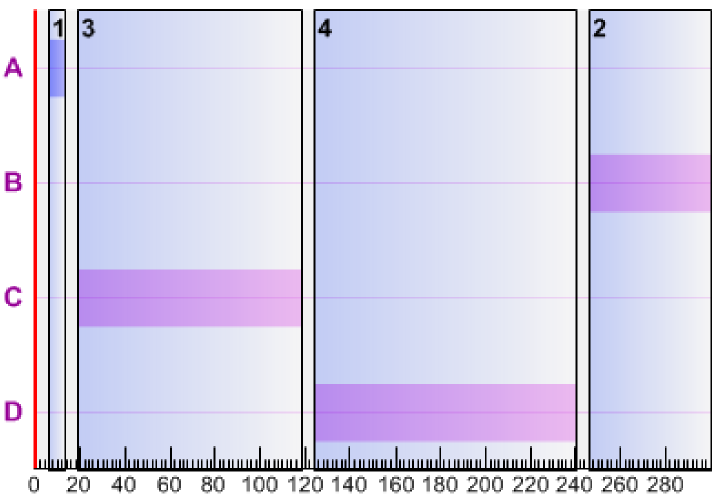
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
4	124.0	116.0	240.0
2	246.0	54.0	0.0

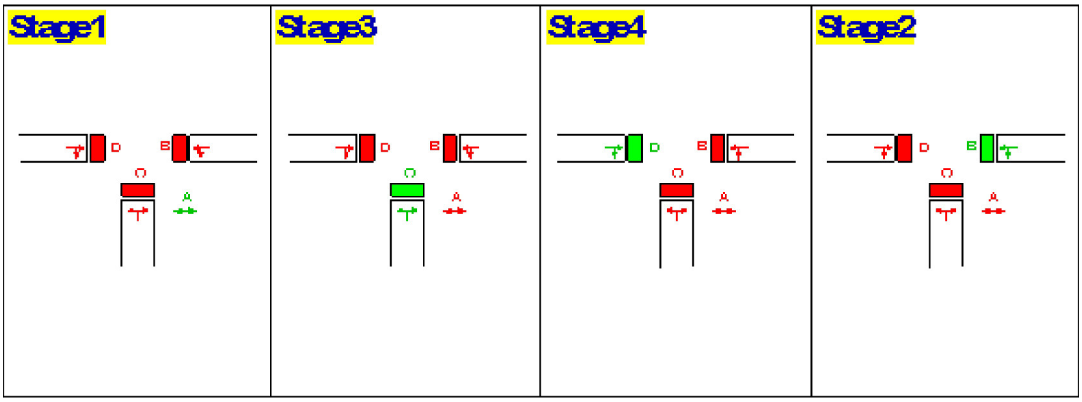
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	246	54.0	0						
C	19	99.0	118						
D	124	116.0	240						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence6; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

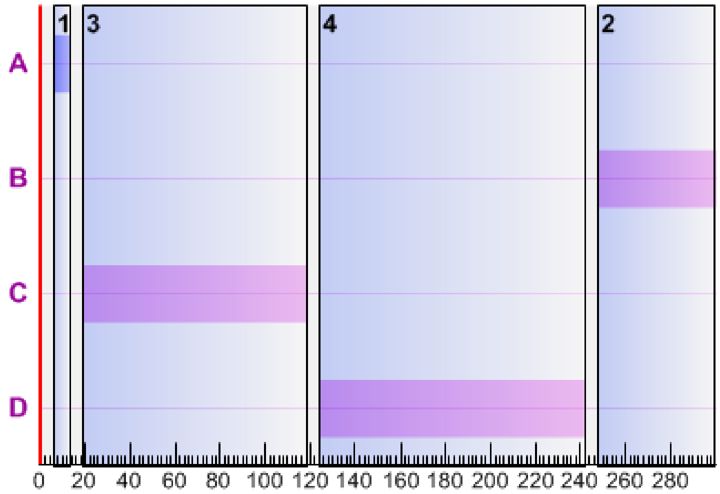
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
4	124.0	118.0	242.0
2	248.0	52.0	0.0

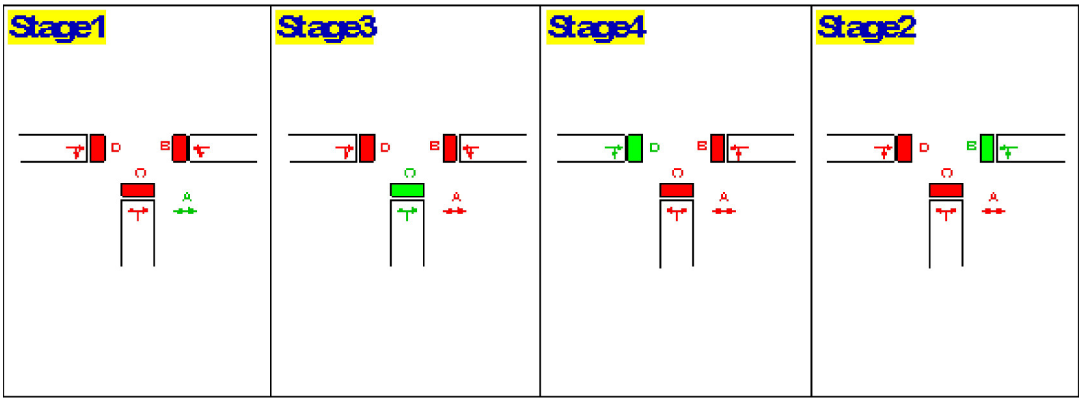
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	248	52.0	0						
C	19	99.0	118						
D	124	118.0	242						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009

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File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 03\Site 03 AM.osc
Report generation date: 19/01/2022 18:54:21

Summary

File Description

Title	Site 03
Date	13/05/2021
Location	
Driving Side	Left
Identifier	
Client	
Jobnumber	
Enumerator	ronan.kearns [SIMON-HP]
Status	(new file)
Description	

Run Options

Run Evaluation Set	No
Evaluation Only	No
Optimise Critical Cycle TimeOnly	No
Use Horizontal Queues	Yes
Favour Continuous Green	No
Phase Timings Fuzziness (s)	0.5
Integer Phase Timings	Yes
Phase Snapping Distance (s)	0
Automatic Lane Turning Props	Yes
Automatic Vehicle Props	No

Geometry

Arms

Arm	Name	Exit Width (m)	Approach Speed (kph)	Exit Speed (kph)	Speed Limit (kph)	Stagger Distance (m)
1	(Arm name)	50.0	10	10	80	0
2	(Arm name)	50.0	10	10	80	0
3	(Arm name)	50.0	10	10	80	0

Traffic Streams

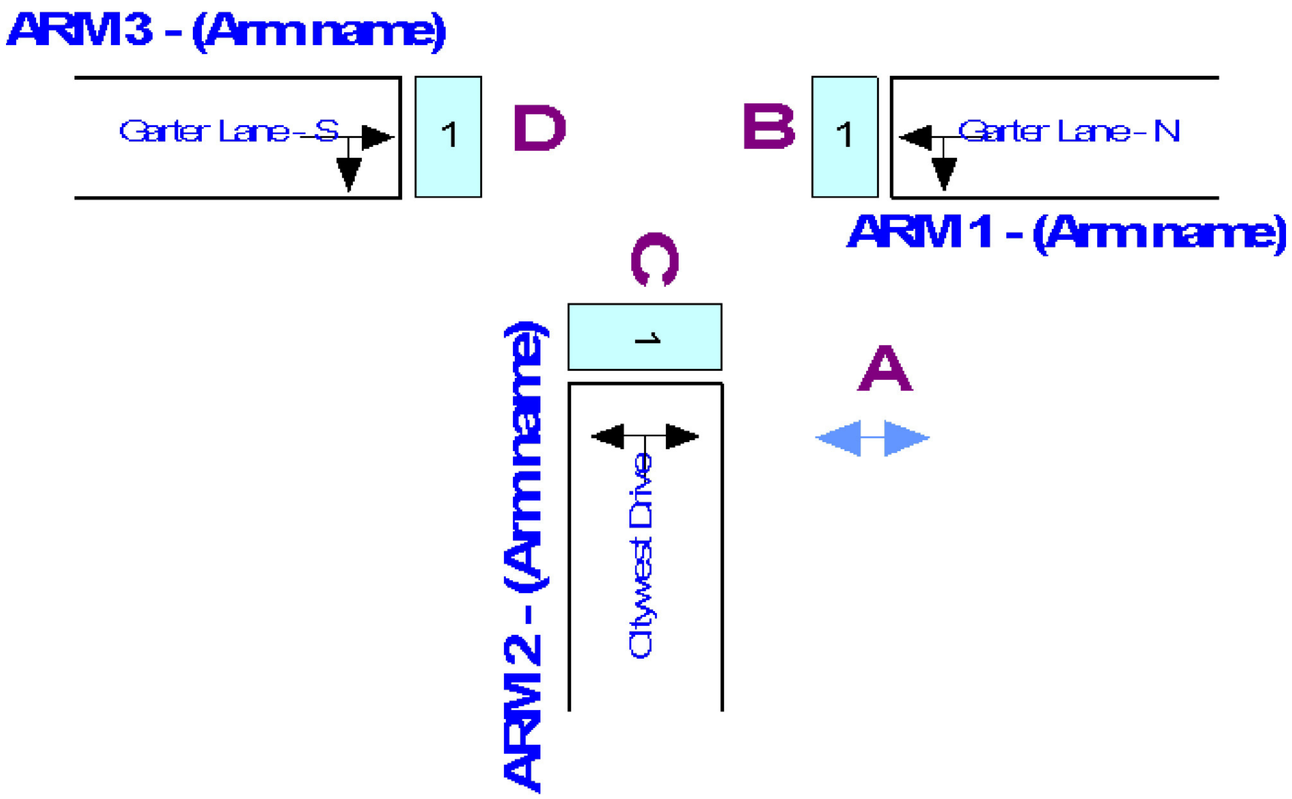
Arm	Traffic Stream	Type	Name	Sat Flow (PCU/hr)	Estimate Sat Flow	Sat Flow 2 (PCU/hr)	Green Phase	Arrow Phase
1	**1**	Traffic		1998	Yes	0	B	-
2	**1**	Traffic		1939	Yes	0	C	-
3	**1**	Traffic		1990	Yes	0	D	-
(Ped)	**1**	Pedestrian		10000	Yes	0	A	-

Arm	Traffic Stream	Relative Start Displacement (s)	Relative End Displacement (s)	Max Deg Sat (%)	Delay Weight (%)	Max Queue (PCU)	Initial Queue (PCU)	Average PCU Per Veh	Heavy Vehicles Percentage
1	**1**	0.0	0.0	90	100	0	0.0	1.10	0
2	**1**	0.0	0.0	90	100	0	0.0	1.10	0
3	**1**	0.0	0.0	90	100	0	0.0	1.10	0
(Ped)	**1**	0.0	0.0	90	100	0	0.0	-	0

Lanes

Arm	Traffic Stream	Lane	Name	Nearside Dest Arm	Straight Dest Arm	Offside Dest Arm	Proportion That Turn	Turning Radius (m)	IsNearside Lane	Width (m)	Gradient (%)	Short Lane Storage (PCU)
1	**1**	**1**	Garter Lane - N	2	3		0.44	10	No	3.75	0.0	0
2	**1**	**1**	Citywest Drive	1		3	1.00	10	No	4.75	0.0	0
3	**1**	**1**	Garter Lane - S		1	2	0.47	10	No	3.75	0.0	0

Junction Diagram



Signals

Signals

Max Cycle Time (s)	300
Fixed Cycle Time (s)	0
Evaluation Cycle Time (s)	0
Start Displacement (s)	1.4
End Displacement (s)	2.9

Phases

Phase	Name	Type	Associated Phase	Phase Min Green (s)	Phase Max Green (s)	Double Green
A	(Name)	Pedestrian	-	7.0	0.0	No
B	(Name)	Traffic	-	7.0	0.0	No
C	(Name)	Traffic	-	7.0	0.0	No
D	(Name)	Traffic	-	7.0	0.0	No

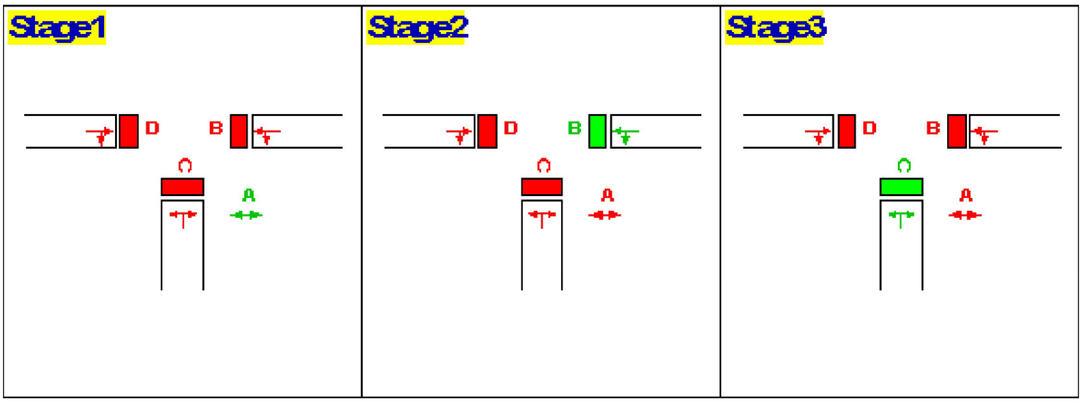
Intergreen Matrix

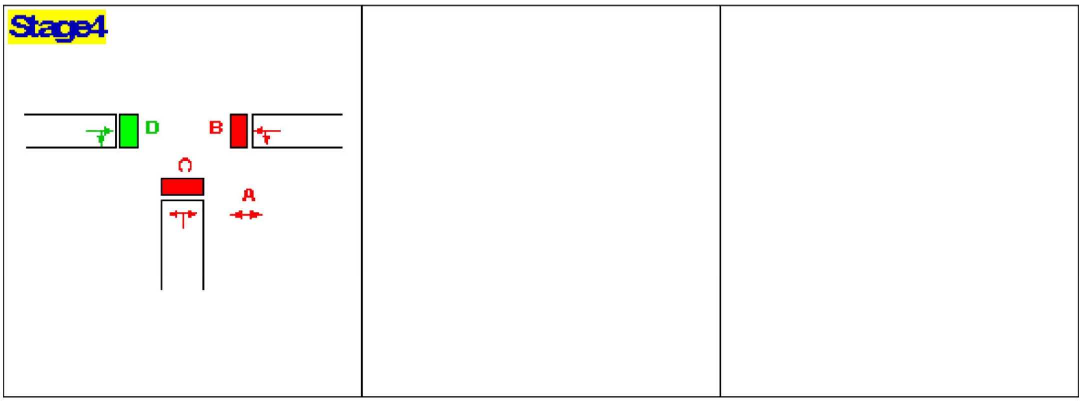
		To			
		A	**B**	**C**	**D**
From	**A**	-	6	6	6
	B	6	-	6	6
	C	6	6	-	6
	D	6	6	6	-

Stages

Stage	Stage Min Green (s)	Phases In This Stage	Use To Generate Sequences
1	-1	A	Yes
2	-1	B	Yes
3	-1	C	Yes
4	-1	D	Yes

Stage Diagrams





Sequences

Sequence	Name	Stages In This Sequence
1		1,2,3,4
2		1,4,3,2
3		1,3,2,4
4		1,4,2,3
5		1,2,4,3
6		1,3,4,2

Constraints

(No constraints)

Traffic

Note:*Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

Configuration

Traffic Scaling Factor	1.00
Time Period (min)	90
Time Segment Length (min)	15
Signal Optimiser Flows	Average
PCUs per Heavy Vehicle	2.00

Demand Sets

Name	Selected	Time Start	Time End	Profile Type	Use Relationship	Relationship
Survey	No	08:00	09:30	ODTAB	No	D1
2027 Base	No	08:00	09:30	ODTAB	No	D1
2027 Base + Dev	No	08:00	09:30	ODTAB	No	D1
2032 Base	No	08:00	09:30	ODTAB	No	D1
2032 Base + Dev	No	08:00	09:30	ODTAB	No	D1
2042 Base	No	08:00	09:30	ODTAB	No	D1
2042 Base + Dev	Yes	08:00	09:30	ODTAB	No	D1

Demand Set7 - 2042 Base + Dev

ODTAB Data (PCU/hr during central 60 min peak period)

		To		
		Arm 1	Arm 2	Arm 3
From	Arm 1	-	254	186
	Arm 2	321	-	457
	Arm 3	387	543	-

Average pedestrian flow on each pedestrian stream (if applicable): 10 ped/hr

Traffic flows (PCU/hr)

Arm	Traffic Stream	Phase	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:15-09:30
1 - (Arm name)	1	B	330	394	483	483	394	330
2 - (Arm name)	1	C	584	697	853	853	697	584
3 - (Arm name)	1	D	698	833	1020	1020	833	698
Pedestrians	1	A	8	9	11	11	9	8

Turning Proportions

Arm	Left Movement Percentage	Straight Movement Percentage	Right Movement Percentage
1 - (Arm name)	58	42	-
2 - (Arm name)	59	-	41
3 - (Arm name)	-	42	58

Accident Prediction

3-arm urban accident model

ABFlow (AADTx1000)	0.0
ACFlow (AADTx1000)	0.0
BAFlow (AADTx1000)	0.0
BCFlow (AADTx1000)	0.0
CAFlow (AADTx1000)	0.0
CBFlow (AADTx1000)	0.0
PedAFlow (Pedx1000/12hr)	0.0
PedBFlow (Pedx1000/12hr)	0.0
PedCFlow (Pedx1000/12hr)	0.0
IsInLondon	No
ADistToNextJunction (m)	0
BDistToNextJunction (m)	0
XXCDistToNextJunction (m)	0
SignalsComplex	No

Note:*'AB Flow' is flow from Arm A to Arm B, where arms are labelled clockwise.*

Traffic Calming

Number	Type	OriginalMeanSpeed (kph)	Separation (m)	Width (m)	Length (m)
1	None	20	20	1.0	1.0
2	None	20	20	1.0	1.0
3	None	20	20	1.0	1.0
4	None	20	20	1.0	1.0

Note:*Speeds/distances are ignored if no traffic calming measures are present.*

3-armurban accident model results

Vehicle only accidents:	0.00accidents per year
Pedestrian only accidents:	0.00accidents per year
Total fatal casualties:	0.00casualties per year
Total serious casualties:	0.00casualties per year
Total slight casualties:	0.00casualties per year

Results

***Note:**Duplicate solutions are not shown.*

Sequence1; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

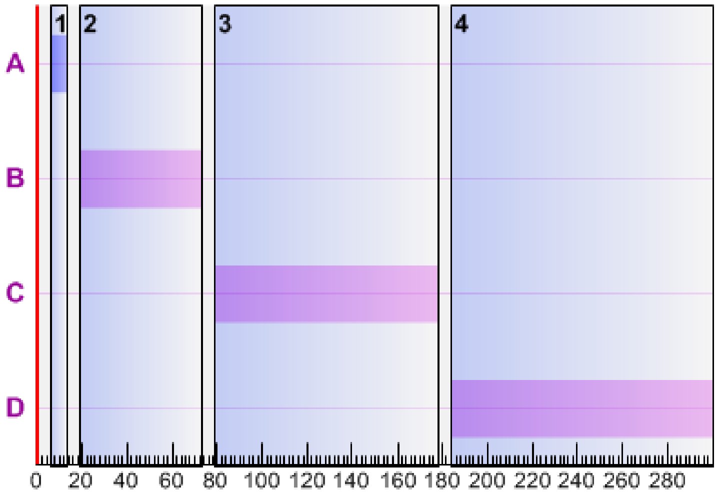
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	54.0	73.0
3	79.0	99.0	178.0
4	184.0	116.0	0.0

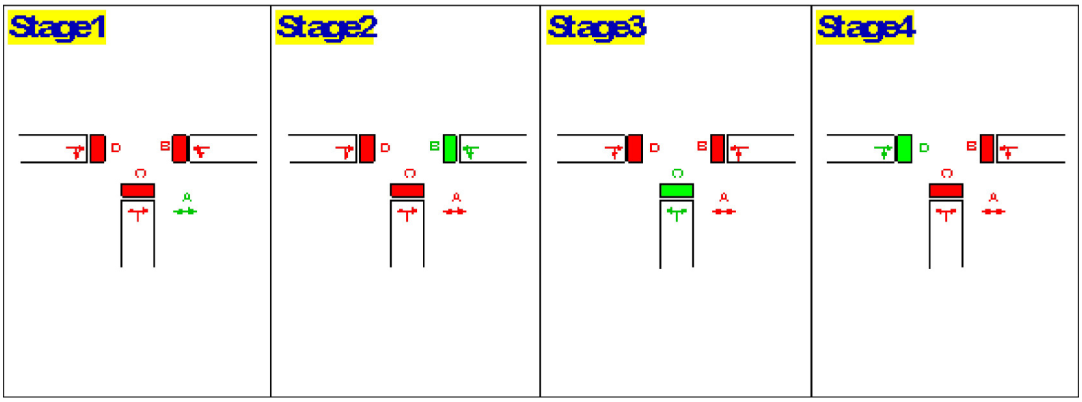
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	54.0	73						
C	79	99.0	178						
D	184	116.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence1; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

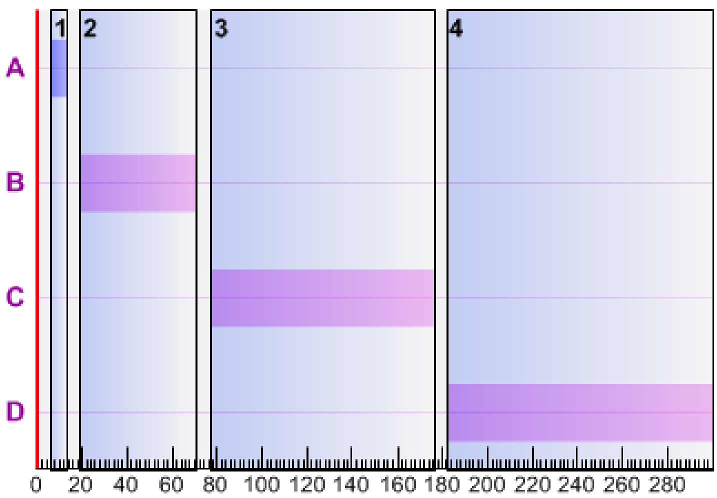
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	52.0	71.0
3	77.0	99.0	176.0
4	182.0	118.0	0.0

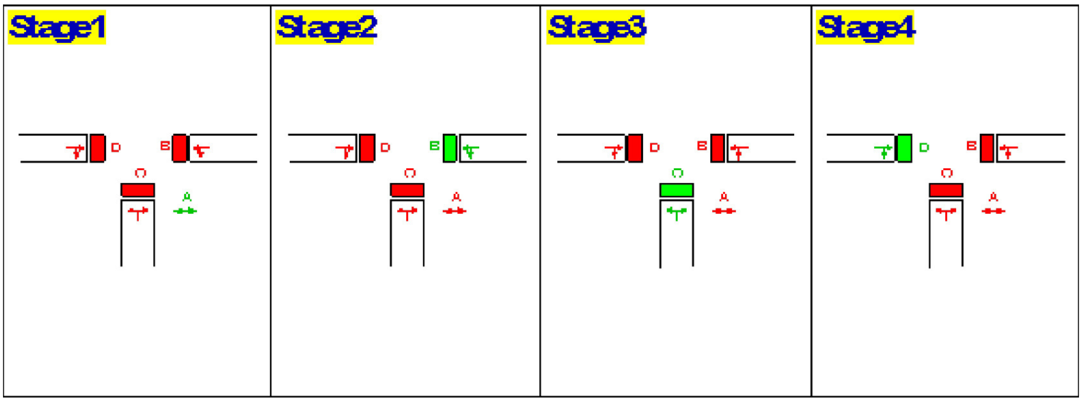
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	52.0	71						
C	77	99.0	176						
D	182	118.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
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3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence2; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

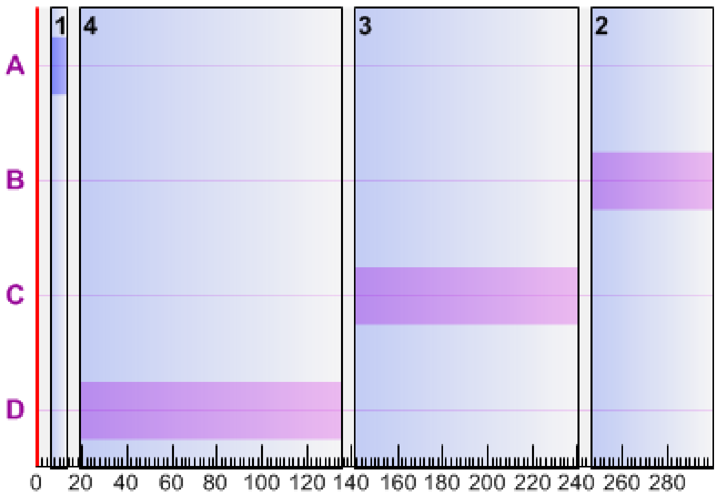
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	116.0	135.0
3	141.0	99.0	240.0
2	246.0	54.0	0.0

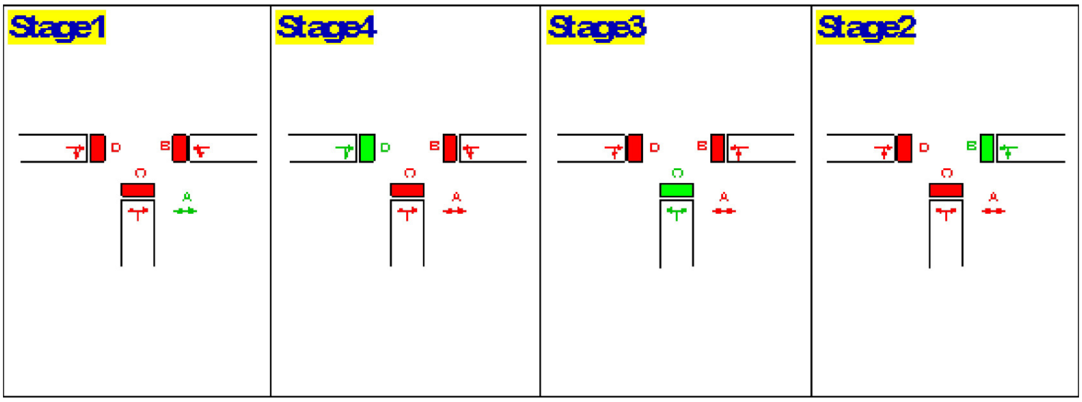
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	246	54.0	0						
C	141	99.0	240						
D	19	116.0	135						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
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3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence2; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

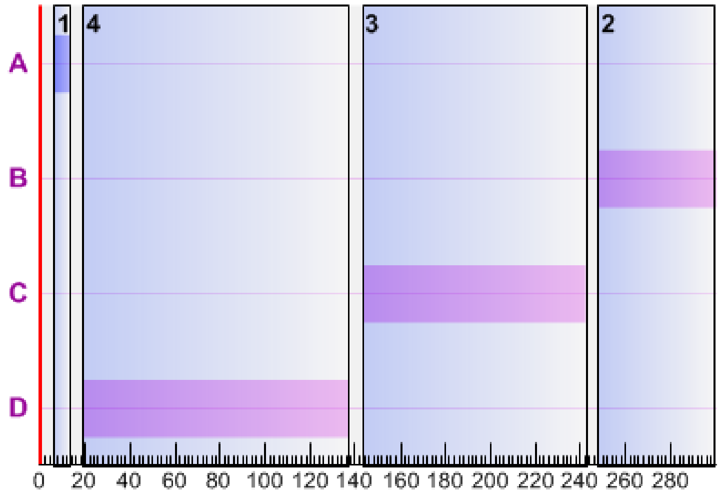
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	118.0	137.0
3	143.0	99.0	242.0
2	248.0	52.0	0.0

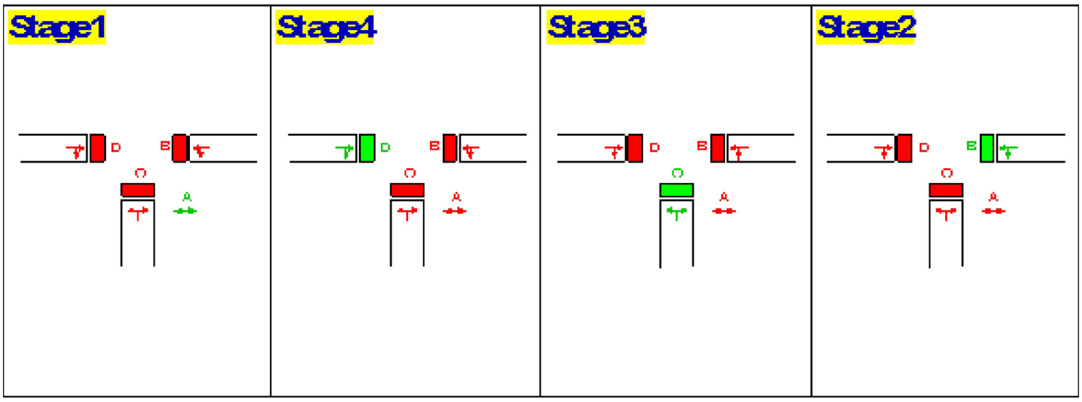
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	248	52.0	0						
C	143	99.0	242						
D	19	118.0	137						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
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2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence3; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

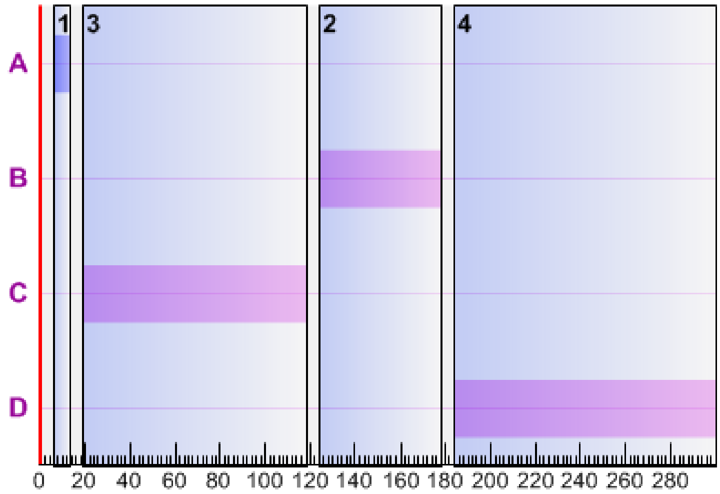
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
2	124.0	54.0	178.0
4	184.0	116.0	0.0

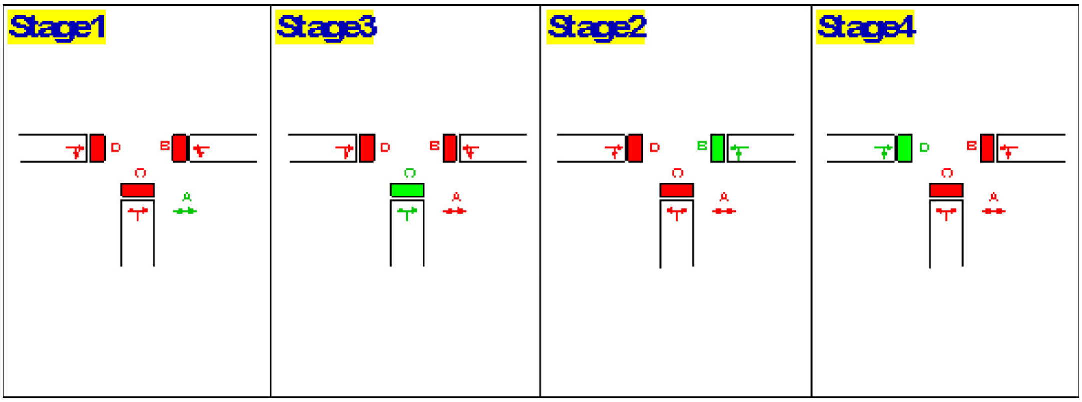
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	124	54.0	178						
C	19	99.0	118						
D	184	116.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	1	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	1	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	1	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	1	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence3; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

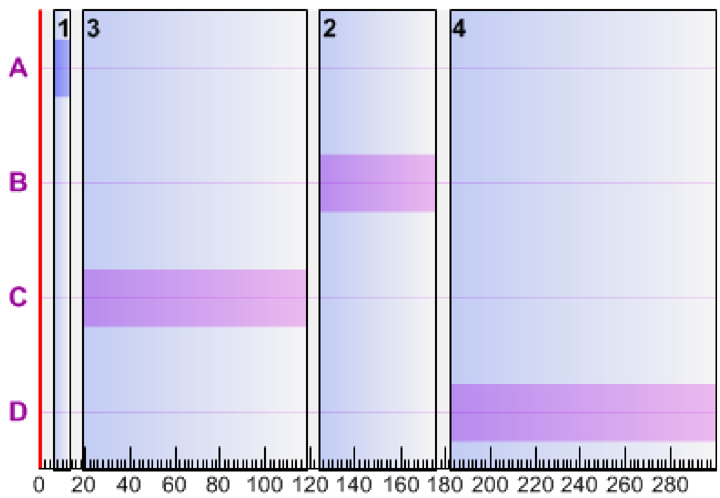
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
2	124.0	52.0	176.0
4	182.0	118.0	0.0

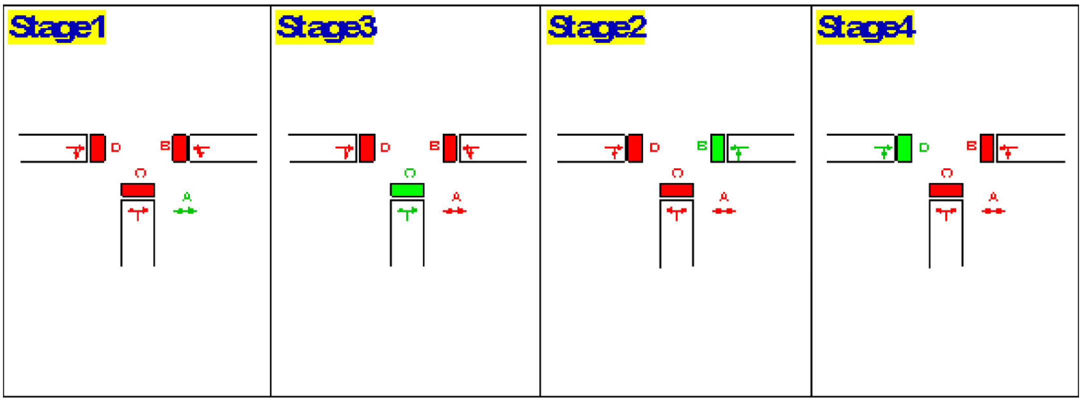
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	124	52.0	176						
C	19	99.0	118						
D	182	118.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence4; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

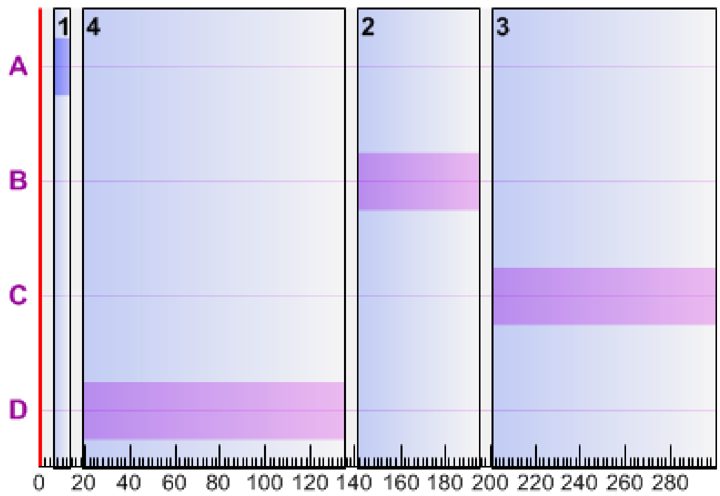
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	116.0	135.0
2	141.0	54.0	195.0
3	201.0	99.0	0.0

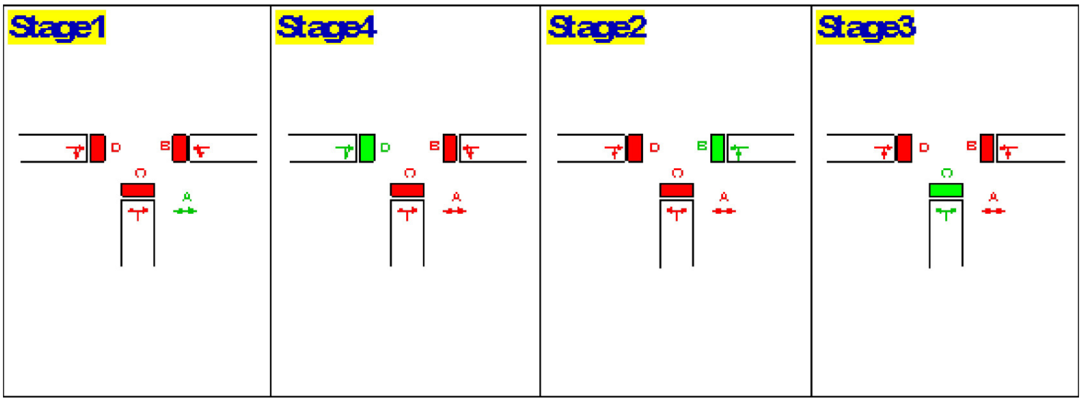
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	141	54.0	195						
C	201	99.0	0						
D	19	116.0	135						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence4; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

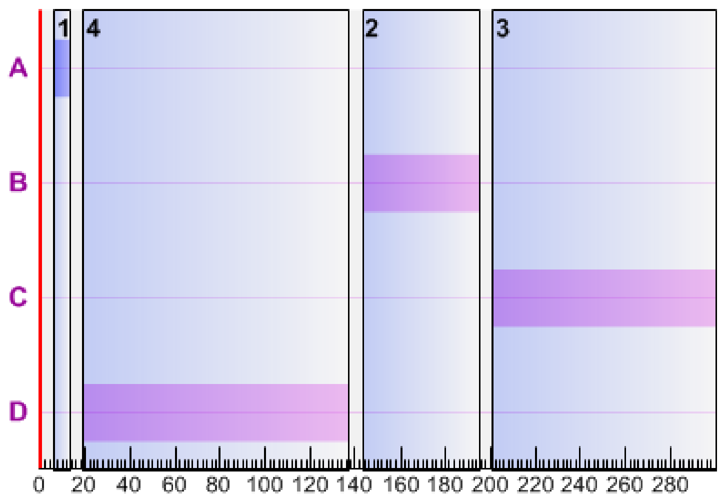
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
4	19.0	118.0	137.0
2	143.0	52.0	195.0
3	201.0	99.0	0.0

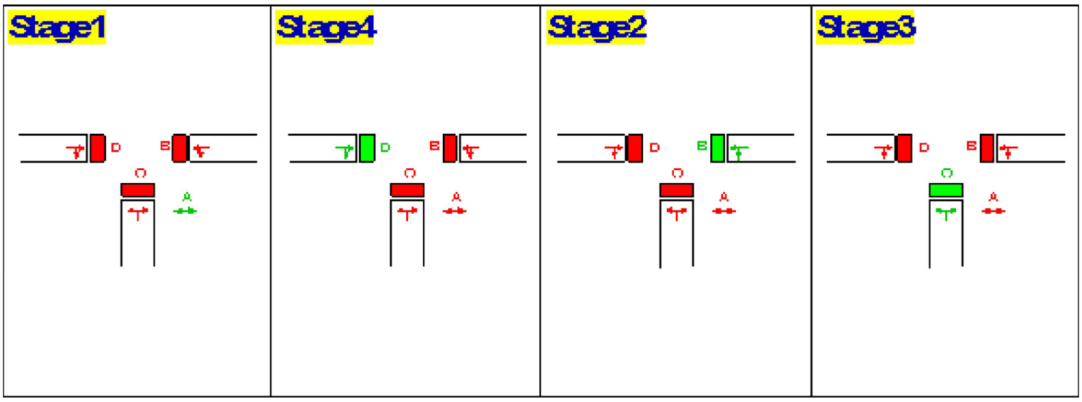
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	143	52.0	195						
C	201	99.0	0						
D	19	118.0	137						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence5; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

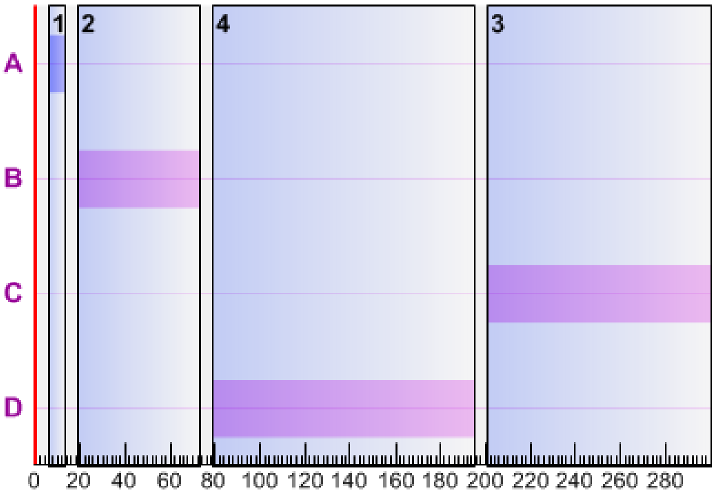
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	54.0	73.0
4	79.0	116.0	195.0
3	201.0	99.0	0.0

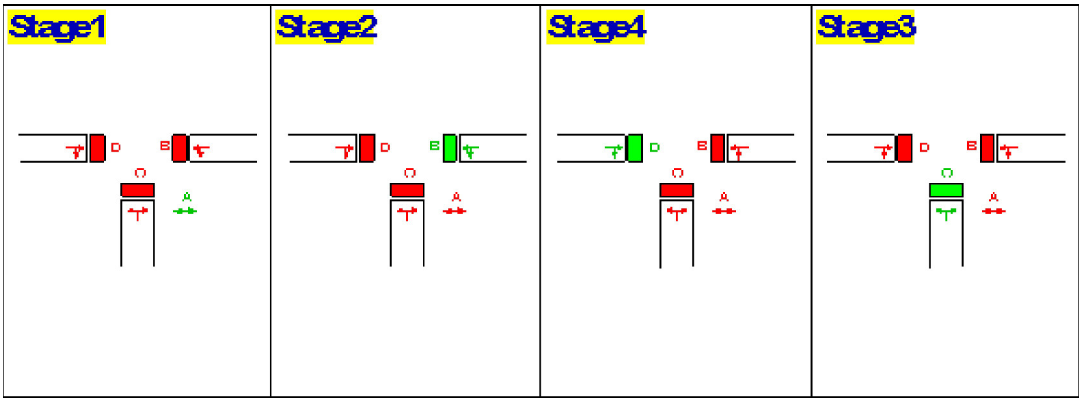
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	54.0	73						
C	201	99.0	0						
D	79	116.0	195						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence5; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

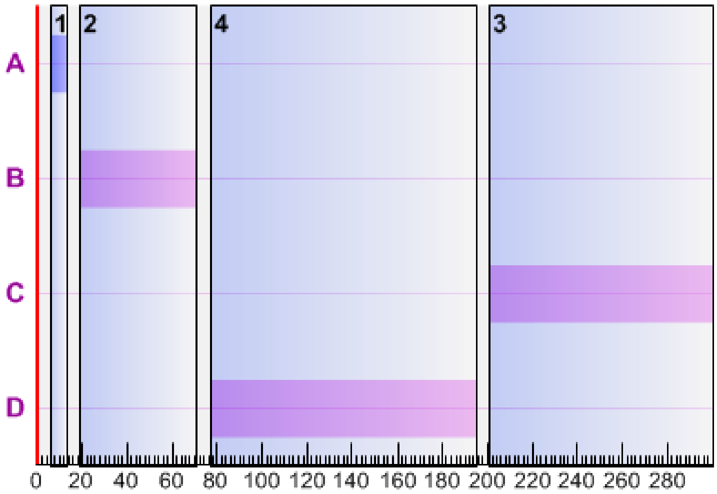
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
2	19.0	52.0	71.0
4	77.0	118.0	195.0
3	201.0	99.0	0.0

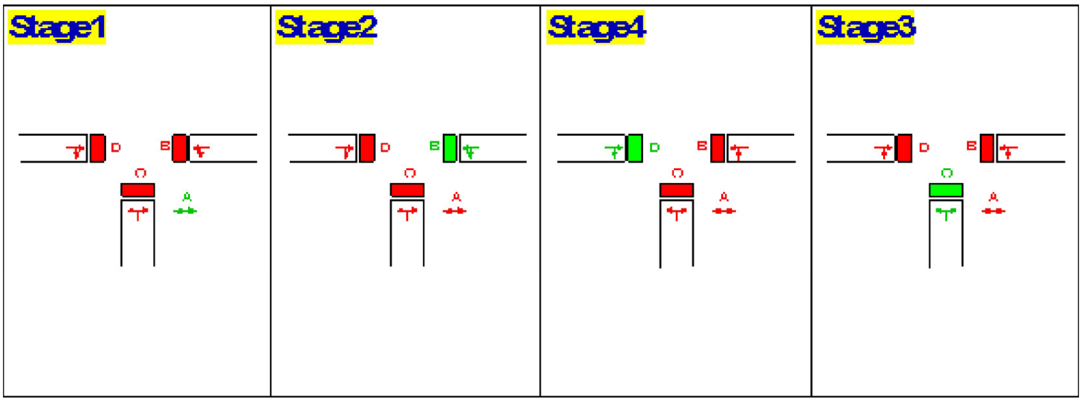
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	19	52.0	71						
C	201	99.0	0						
D	77	118.0	195						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence6; Objective: MAXIMUM CAPACITY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-17.78	192.16	192.16	40.7

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

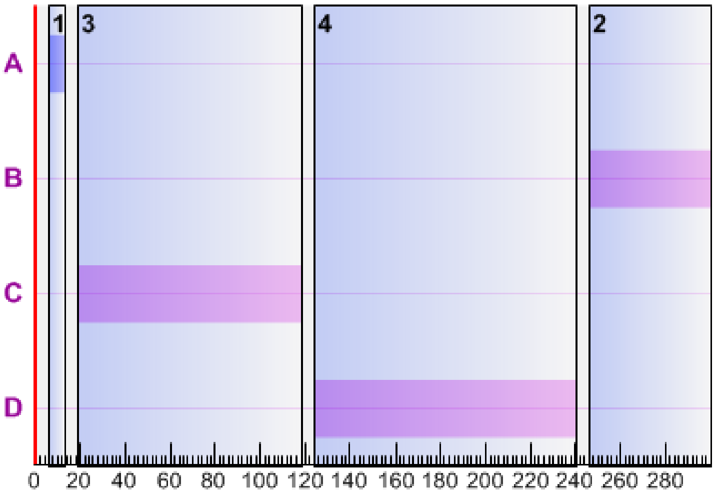
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
4	124.0	116.0	240.0
2	246.0	54.0	0.0

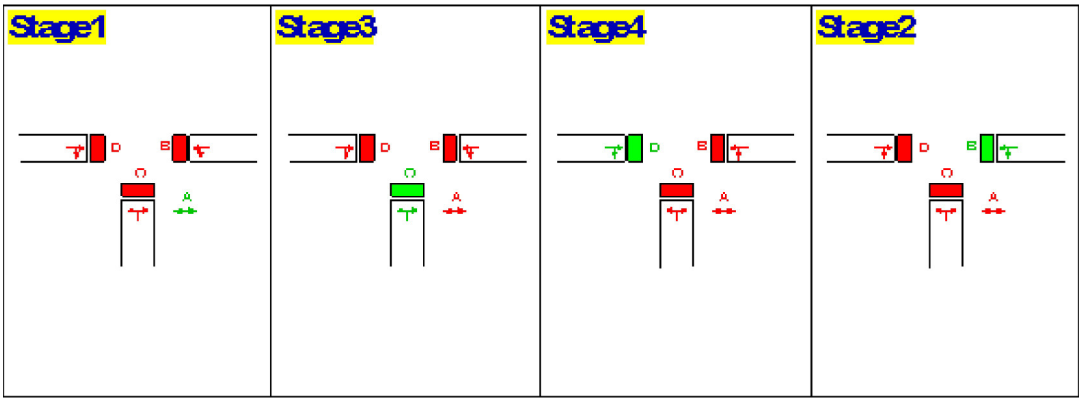
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	246	54.0	0						
C	19	99.0	118						
D	124	116.0	240						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	55.50	381.98	42.65	108.76	-17.25	59.86	87.16	27.30	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	117.50	334.84	79.06	109.06	-17.47	135.72	183.32	47.60	20.00
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Sequence6; Objective: MINIMUM DELAY

Errors and Warnings

Code	Describtion
W26	Unable to find a cycle time for which the junction is within capacity because the junction is heavily overloaded.
W23	Flows must be reduced by 18 percent.

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
300.0	-20.23	191.75	191.75	40.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

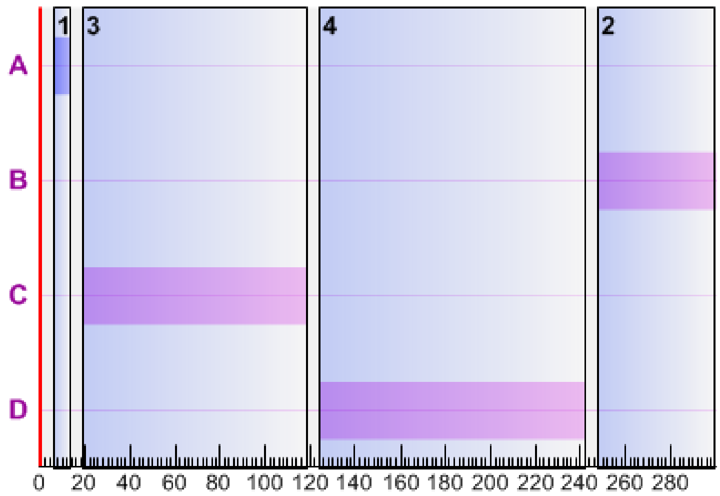
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	6.0	7.0	13.0
3	19.0	99.0	118.0
4	124.0	118.0	242.0
2	248.0	52.0	0.0

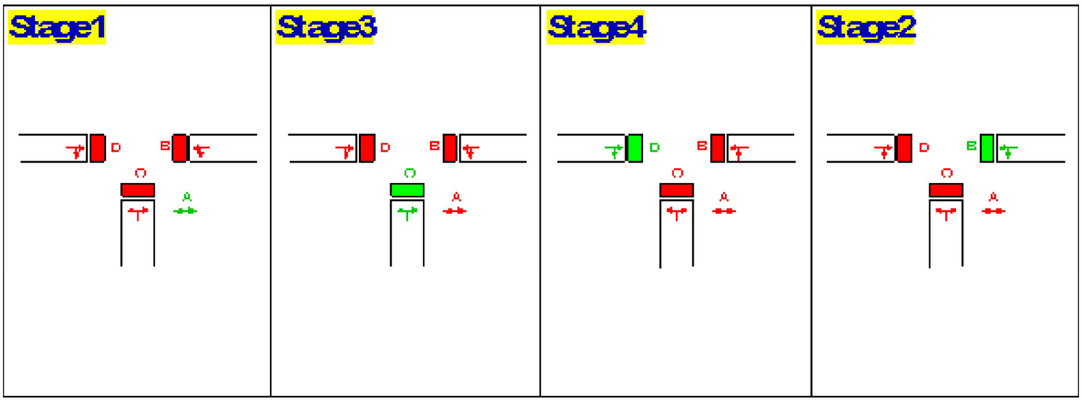
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	6	7.0	13						
B	248	52.0	0						
C	19	99.0	118						
D	124	118.0	242						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	402	B	53.50	455.61	50.88	112.82	-20.23	79.67	106.20	26.53	6.00
2	**1**	711	C	100.50	354.91	70.09	109.46	-17.78	114.93	156.90	41.96	14.70
3	**1**	850	D	119.50	298.27	70.43	107.23	-16.07	113.48	161.37	47.88	19.30
Ped	**1**	9	A	8.50	142.00	0.35	3.18	9999.00	0.00	0.73	0.73	0.00

Site 8 – Boherboy Road/Saggart Signal Controlled Junction

OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009

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File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 04\Site 04 - PM.osc
Report generation date: 19/01/2022 18:57:39

Summary

File Description

Title	(untitled)
Date	22/06/2017
Location	
Driving Side	Left
Identifier	
Client	
Jobnumber	
Enumerator	alan.connolly [SIMON-HP]
Status	(new file)
Description	

Run Options

Run Evaluation Set	No
Evaluation Only	No
Optimise Critical Cycle TimeOnly	No
Use Horizontal Queues	Yes
Favour Continuous Green	No
Phase Timings Fuzziness (s)	0.5
Integer Phase Timings	Yes
Phase Snapping Distance (s)	0
Automatic Lane Turning Props	Yes
Automatic Vehicle Props	No

Geometry

Arms

Arm	Name	Exit Width (m)	Approach Speed (kph)	Exit Speed (kph)	Speed Limit (kph)	Stagger Distance (m)
1	Boherboy Road	50.0	10	10	80	0
2	Slade Road	50.0	10	10	80	0
3	Mill Road	50.0	10	10	80	0
4	Garter Lane	50.0	10	10	80	0

Traffic Streams

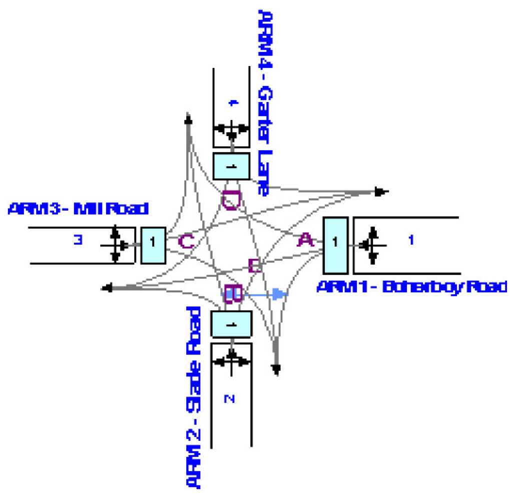
Arm	Traffic Stream	Type	Name	Sat Flow (PCU/hr)	Estimate Sat Flow	Sat Flow 2 (PCU/hr)	Green Phase	Arrow Phase
1	**1**	Traffic		2146	Yes	0	A	-
2	**1**	Traffic		1900	Yes	0	B	-
3	**1**	Traffic		1774	Yes	0	C	-
4	**1**	Traffic		1804	Yes	0	D	-
(Ped)	**1**	Pedestrian		10000	Yes	0	E	-

Arm	Traffic Stream	Relative Start Displacement (s)	Relative End Displacement (s)	Max Deg Sat (%)	Delay Weight (%)	Max Queue (PCU)	Initial Queue (PCU)	Average PCU Per Veh	Heavy Vehicles Percentage
1	**1**	0.0	0.0	90	100	0	0.0	1.10	0
2	**1**	0.0	0.0	90	100	0	0.0	1.10	0
3	**1**	0.0	0.0	90	100	0	0.0	1.10	0
4	**1**	0.0	0.0	90	100	0	0.0	1.10	0
(Ped)	**1**	0.0	0.0	90	100	0	0.0	-	0

Lanes

Arm	Traffic Stream	Lane	Name	Nearside Dest Arm	Straight Dest Arm	Offside Dest Arm	Proportion That Turn	Turning Radius (m)	IsNearside Lane	Width (m)	Gradient (%)	Short Lane Storage (PCU)
1	**1**	**1**	1	2	3	4	0.26	10	No	4.75	0.0	0
2	**1**	**1**	2	3	4	1	0.63	10	No	3.25	0.0	0
3	**1**	**1**	3	4	1	2	0.53	10	Yes	3.00	0.0	0
4	**1**	**1**	4	1	2	3	0.41	10	Yes	3.00	0.0	0

Junction Diagram



Signals

Signals

Max Cycle Time (s)	120
Fixed Cycle Time (s)	0
Evaluation Cycle Time (s)	0
Start Displacement (s)	1.4
End Displacement (s)	2.9

Phases

Phase	Name	Type	Associated Phase	Phase Min Green (s)	Phase Max Green (s)	Double Green
A		Traffic	-	7.0	0.0	No
B	(Name)	Traffic	-	7.0	0.0	No
C	(Name)	Traffic	-	7.0	0.0	No
D	(Name)	Traffic	-	7.0	0.0	No
E	(Name)	Pedestrian	-	7.0	0.0	No

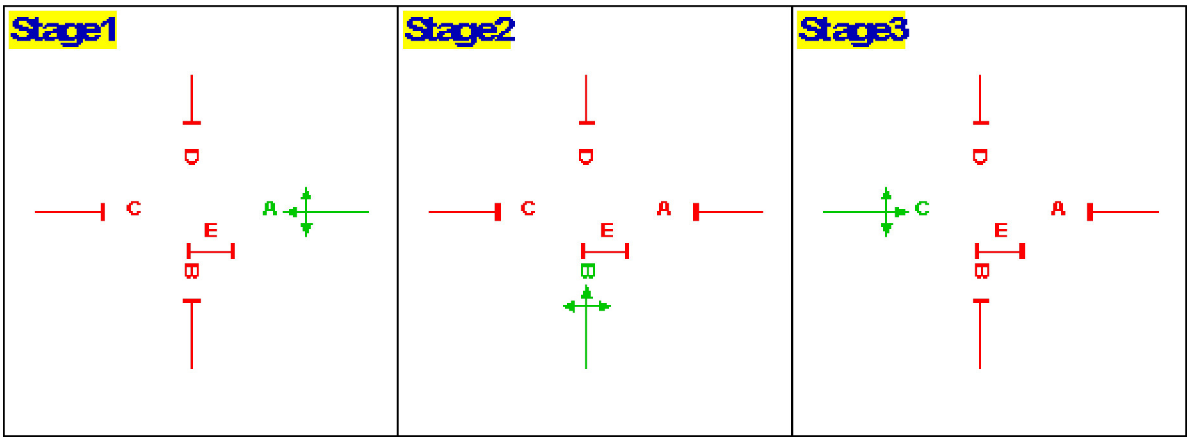
Intergreen Matrix

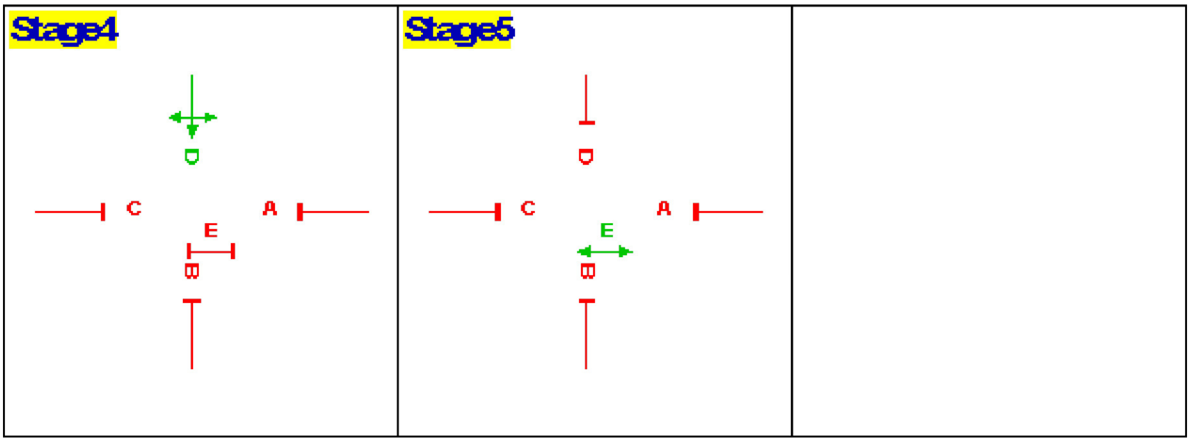
		To				
		A	**B**	**C**	**D**	**E**
From	**A**	-	3	3	3	3
	B	3	-	3	3	3
	C	3	3	-	3	3
	D	3	3	3	-	3
	E	3	3	3	3	-

Stages

Stage	Stage Min Green (s)	Phases In This Stage	Use To Generate Sequences
1	-1	A	Yes
2	-1	B	Yes
3	-1	C	Yes
4	-1	D	Yes
5	-1	E	Yes

Stage Diagrams





Sequences

Sequence	Name	Stages In This Sequence
1		1,2,3,4,5

Constraints

(No constraints)

Traffic

Note:*Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

Configuration

Traffic Scaling Factor	1.00
Time Period (min)	90
Time Segment Length (min)	15
Signal Optimiser Flows	Average
PCUs per Heavy Vehicle	2.00

Demand Sets

Name	Selected	Time Start	Time End	Profile Type	Use Relationship	Relationship
Survey	No	17:00	18:30	ODTAB	No	D1
2027 Base	No	17:00	18:30	ODTAB	No	D1
2027 Base with Dev	No	17:00	18:30	ODTAB	No	D1
2032 Base	No	17:00	18:30	ODTAB	No	D1
2032 Base with Dev	No	17:00	18:30	ODTAB	No	D1
2042 Base	No	17:00	18:30	ODTAB	No	D1
2042 Base with Dev	Yes	17:00	18:30	ODTAB	No	D1

Demand Set7 - 2042 Base with Dev

ODTAB Data (PCU/hr during central 60 min peak period)

	To				
		Arm 1	**Arm 2**	**Arm 3**	**Arm 4**
From	**Arm 1**	-	75	411	64
	Arm 2	42	-	58	53
	Arm 3	247	78	-	183
	Arm 4	125	245	38	-

Average pedestrian flow on each pedestrian stream (if applicable): 10 ped/hr

Traffic flows (PCU/hr)

Arm	Traffic Stream	Phase	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15	18:15-18:30
1 - Boherboy Road	1	A	417	497	609	609	497	417
2 - Slade Road	1	B	115	137	168	168	137	115
3 - Mill Road	1	C	381	455	557	557	455	381
4 - Garter Lane	1	D	306	365	448	448	365	306
Pedestrians	1	E	8	9	11	11	9	8

Turning Proportions

Arm	Left Movement Percentage	Straight Movement Percentage	Right Movement Percentage
1 - Boherboy Road	14	75	12
2 - Slade Road	38	35	27
3 - Mill Road	36	49	15
4 - Garter Lane	31	60	9

Accident Prediction

4-arm urban accident model

AInFlow (AADTx1000)	0.0
BInFlow (AADTx1000)	0.0
CInFlow (AADTx1000)	0.0
DInFlow (AADTx1000)	0.0
PedAFlow (Pedx1000/12hr)	0.0
PedBFlow (Pedx1000/12hr)	0.0
PedCFlow (Pedx1000/12hr)	0.0
PedDFlow (Pedx1000/12hr)	0.0
NumStagesPerCycle	2
SeparatePedStage	No

Note:*'AB Flow' is flow from Arm A to Arm B, where arms are labelled clockwise.*

Traffic Calming

Number	Type	OriginalMeanSpeed (kph)	Separation (m)	Width (m)	Length (m)
1	None	20	20	1.0	1.0
2	None	20	20	1.0	1.0
3	None	20	20	1.0	1.0
4	None	20	20	1.0	1.0

Note:*Speeds/distances are ignored if no traffic calming measures are present.*

4-armurban accident model results

Vehicle only accidents:	0.00accidents per year
Pedestrian only accidents:	0.00accidents per year
Total fatal casualties:	0.00casualties per year
Total serious casualties:	0.00casualties per year
Total slight casualties:	0.00casualties per year

Results

Note:*Duplicate solutions are not shown.*

Sequence1; Objective: CRITICAL CYCLE TIME

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
123.0	-0.69	35.18	35.18	34.5

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

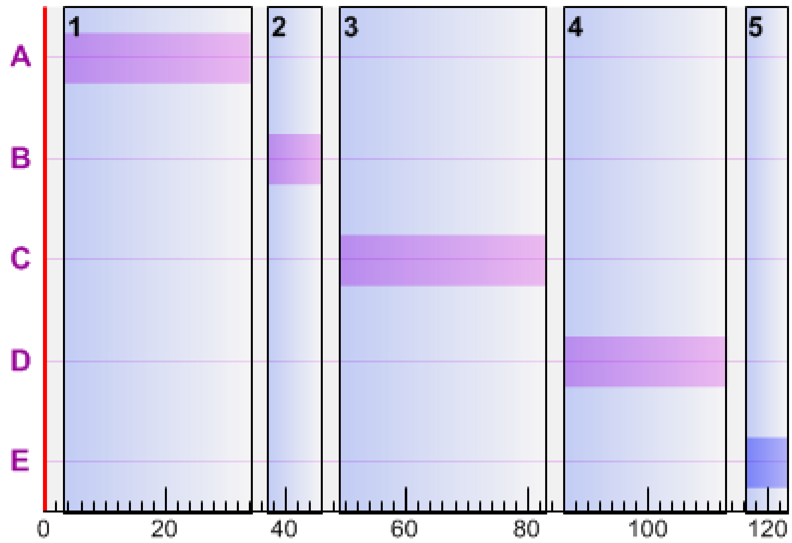
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	3.0	31.0	34.0
2	37.0	9.0	46.0
3	49.0	34.0	83.0
4	86.0	27.0	113.0
5	116.0	7.0	0.0

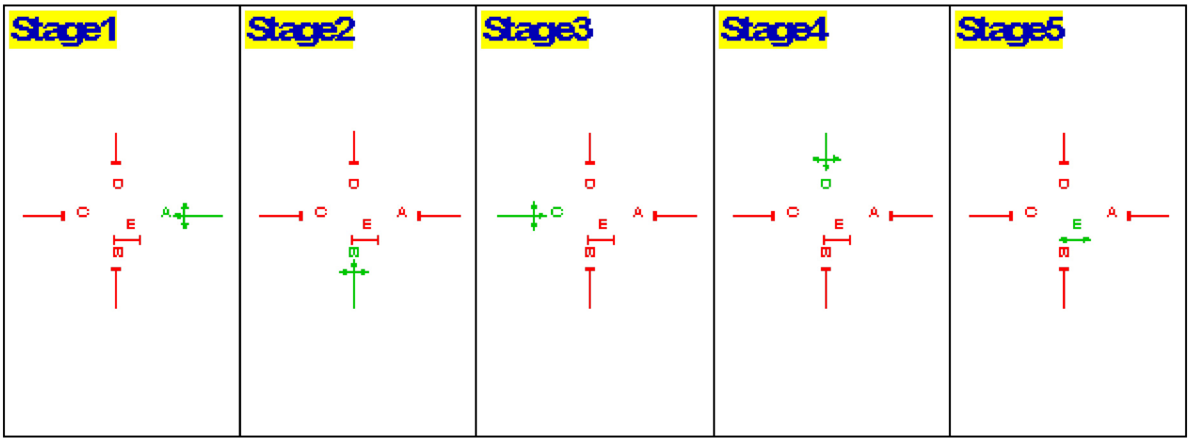
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	3	31.0	34						
B	37	9.0	46						
C	49	34.0	83						
D	86	27.0	113						
E	116	7.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	508	A	32.50	75.57	10.66	89.59	0.46	5.31	19.52	14.21	12.30
2	**1**	140	B	10.50	129.97	5.05	86.32	4.27	3.27	7.77	4.50	2.30
3	**1**	464	C	35.50	80.47	10.37	90.62	-0.69	5.85	18.28	12.43	11.40
4	**1**	373	D	28.50	86.40	8.95	89.23	0.86	4.87	15.45	10.58	8.50
Ped	**1**	9	E	8.50	53.38	0.13	1.30	9999.00	0.00	0.29	0.29	0.00

Sequence1; Objective: MAXIMUM CAPACITY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
120.0	-3.30	36.24	36.24	35.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

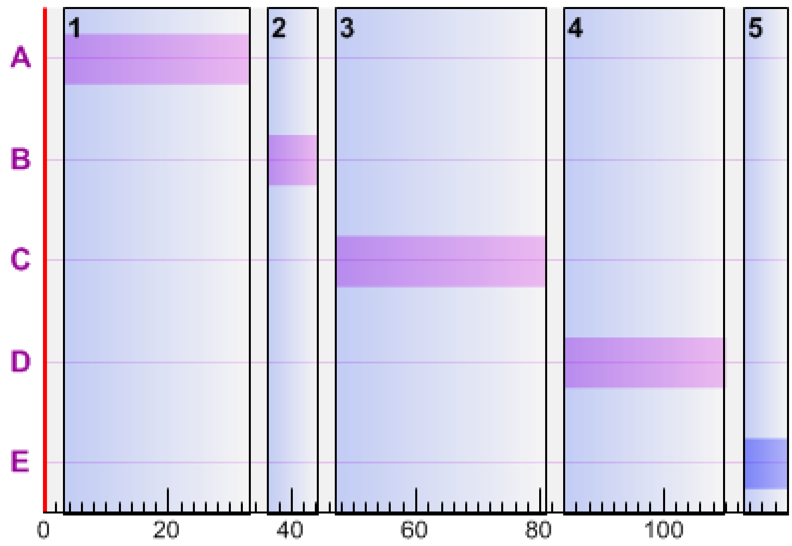
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	3.0	30.0	33.0
2	36.0	8.0	44.0
3	47.0	34.0	81.0
4	84.0	26.0	110.0
5	113.0	7.0	0.0

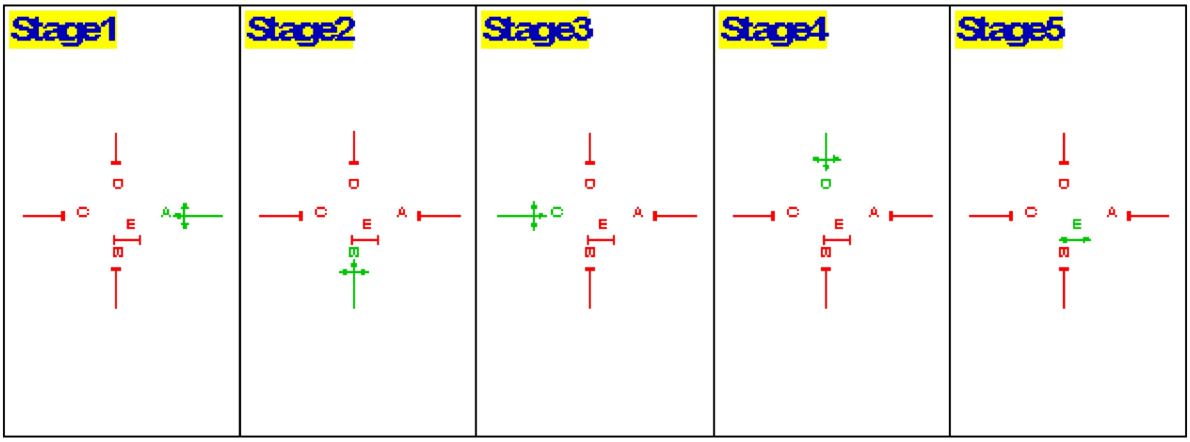
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	3	30.0	33						
B	36	8.0	44						
C	47	34.0	81						
D	84	26.0	110						
E	113	7.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	508	A	31.50	76.62	10.81	90.18	-0.20	5.66	19.56	13.90	12.00
2	**1**	140	B	9.50	175.85	6.84	93.07	-3.30	5.88	10.30	4.42	2.10
3	**1**	464	C	35.50	71.32	9.19	88.41	1.79	4.64	16.64	12.01	12.70
4	**1**	373	D	27.50	89.47	9.27	90.22	-0.25	5.39	15.75	10.36	8.20
Ped	**1**	9	E	8.50	51.89	0.13	1.27	9999.00	0.00	0.28	0.28	0.00

Sequence1; Objective: MINIMUM DELAY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
120.0	-3.30	36.24	36.24	35.0

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

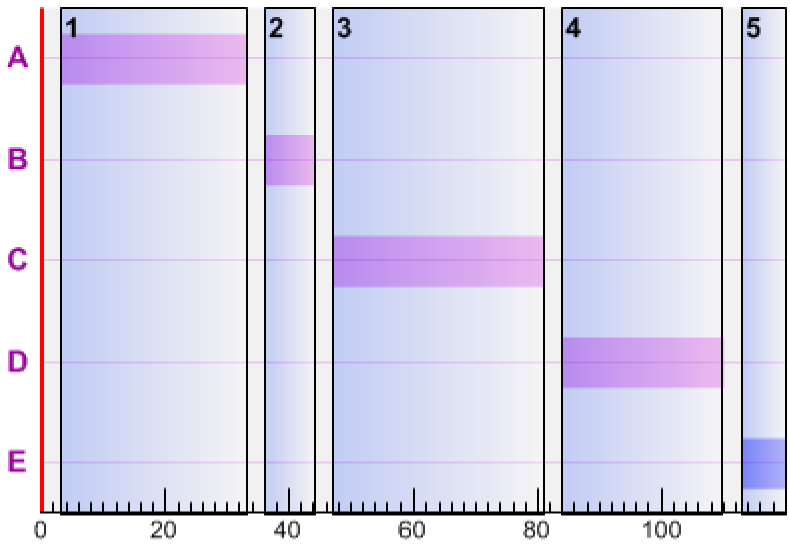
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	3.0	30.0	33.0
2	36.0	8.0	44.0
3	47.0	34.0	81.0
4	84.0	26.0	110.0
5	113.0	7.0	0.0

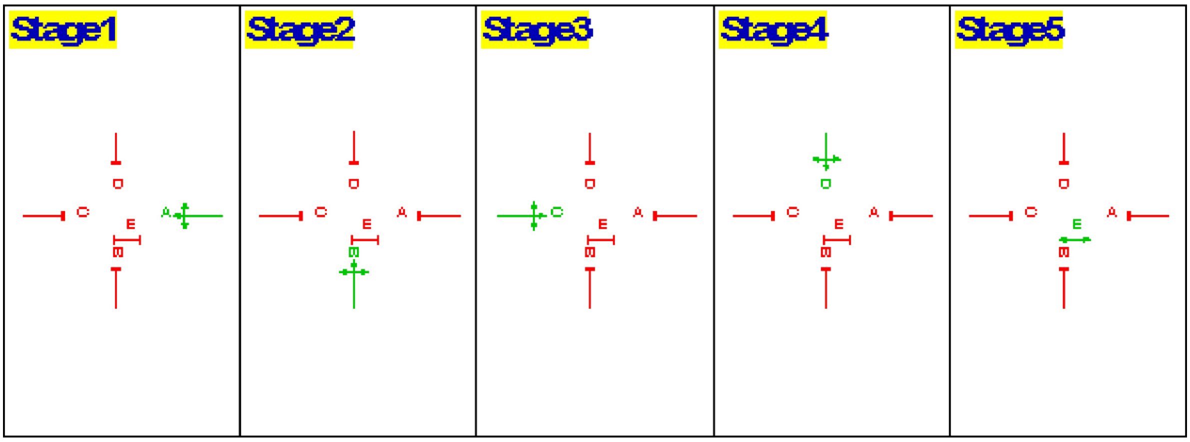
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	3	30.0	33						
B	36	8.0	44						
C	47	34.0	81						
D	84	26.0	110						
E	113	7.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	508	A	31.50	76.62	10.81	90.18	-0.20	5.66	19.56	13.90	12.00
2	**1**	140	B	9.50	175.85	6.84	93.07	-3.30	5.88	10.30	4.42	2.10
3	**1**	464	C	35.50	71.32	9.19	88.41	1.79	4.64	16.64	12.01	12.70
4	**1**	373	D	27.50	89.47	9.27	90.22	-0.25	5.39	15.75	10.36	8.20
Ped	**1**	9	E	8.50	51.89	0.13	1.27	9999.00	0.00	0.28	0.28	0.00

OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009

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File: S:\02.Projects\2020 Projects\P200107 - BOHERBOY, Boherboy Road Upgrade\5.0 Calculations\5.3 Higways\Modelling\Site 04\Site 04 - AM.osc
Report generation date: 19/01/2022 18:56:49

Summary

File Description

Title	(untitled)
Date	22/06/2017
Location	
Driving Side	Left
Identifier	
Client	
Jobnumber	
Enumerator	alan.connolly [SIMON-HP]
Status	(new file)
Description	

Run Options

Run Evaluation Set	No
Evaluation Only	No
Optimise Critical Cycle TimeOnly	No
Use Horizontal Queues	Yes
Favour Continuous Green	No
Phase Timings Fuzziness (s)	0.5
Integer Phase Timings	Yes
Phase Snapping Distance (s)	0
Automatic Lane Turning Props	Yes
Automatic Vehicle Props	No

Geometry

Arms

Arm	Name	Exit Width (m)	Approach Speed (kph)	Exit Speed (kph)	Speed Limit (kph)	Stagger Distance (m)
1	Boherboy Road	50.0	10	10	80	0
2	Slade Road	50.0	10	10	80	0
3	Mill Road	50.0	10	10	80	0
4	Garter Lane	50.0	10	10	80	0

Traffic Streams

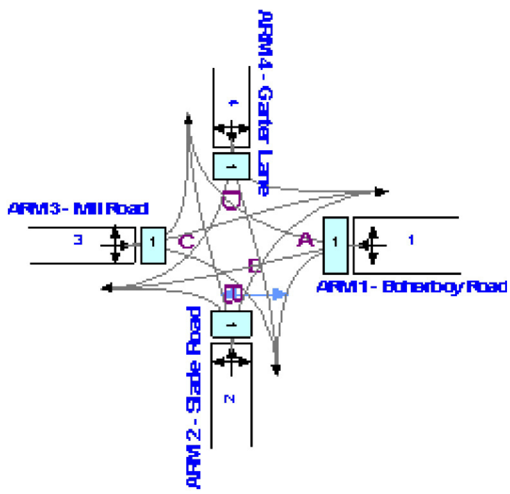
Arm	Traffic Stream	Type	Name	Sat Flow (PCU/hr)	Estimate Sat Flow	Sat Flow 2 (PCU/hr)	Green Phase	Arrow Phase
1	**1**	Traffic		2104	Yes	0	A	-
2	**1**	Traffic		1971	Yes	0	B	-
3	**1**	Traffic		1772	Yes	0	C	-
4	**1**	Traffic		1750	Yes	0	D	-
(Ped)	**1**	Pedestrian		10000	Yes	0	E	-

Arm	Traffic Stream	Relative Start Displacement (s)	Relative End Displacement (s)	Max Deg Sat (%)	Delay Weight (%)	Max Queue (PCU)	Initial Queue (PCU)	Average PCU Per Veh	Heavy Vehicles Percentage
1	**1**	0.0	0.0	90	100	0	0.0	1.10	0
2	**1**	0.0	0.0	90	100	0	0.0	1.10	0
3	**1**	0.0	0.0	90	100	0	0.0	1.10	0
4	**1**	0.0	0.0	90	100	0	0.0	1.10	0
(Ped)	**1**	0.0	0.0	90	100	0	0.0	-	0

Lanes

Arm	Traffic Stream	Lane	Name	Nearside Dest Arm	Straight Dest Arm	Offside Dest Arm	Proportion That Turn	Turning Radius (m)	IsNearside Lane	Width (m)	Gradient (%)	Short Lane Storage (PCU)
1	**1**	**1**	1	2	3	4	0.40	10	No	4.75	0.0	0
2	**1**	**1**	2	3	4	1	0.37	10	No	3.25	0.0	0
3	**1**	**1**	3	4	1	2	0.54	10	Yes	3.00	0.0	0
4	**1**	**1**	4	1	2	3	0.63	10	Yes	3.00	0.0	0

Junction Diagram



Signals

Signals

Max Cycle Time (s)	120
Fixed Cycle Time (s)	0
Evaluation Cycle Time (s)	0
Start Displacement (s)	1.4
End Displacement (s)	2.9

Phases

Phase	Name	Type	Associated Phase	Phase Min Green (s)	Phase Max Green (s)	Double Green
A		Traffic	-	7.0	0.0	No
B	(Name)	Traffic	-	7.0	0.0	No
C	(Name)	Traffic	-	7.0	0.0	No
D	(Name)	Traffic	-	7.0	0.0	No
E	(Name)	Pedestrian	-	7.0	0.0	No

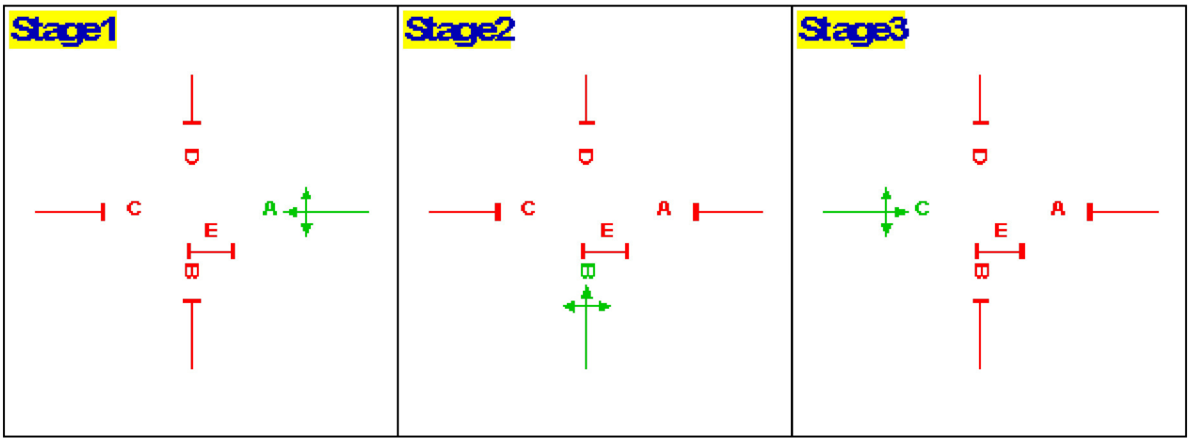
Intergreen Matrix

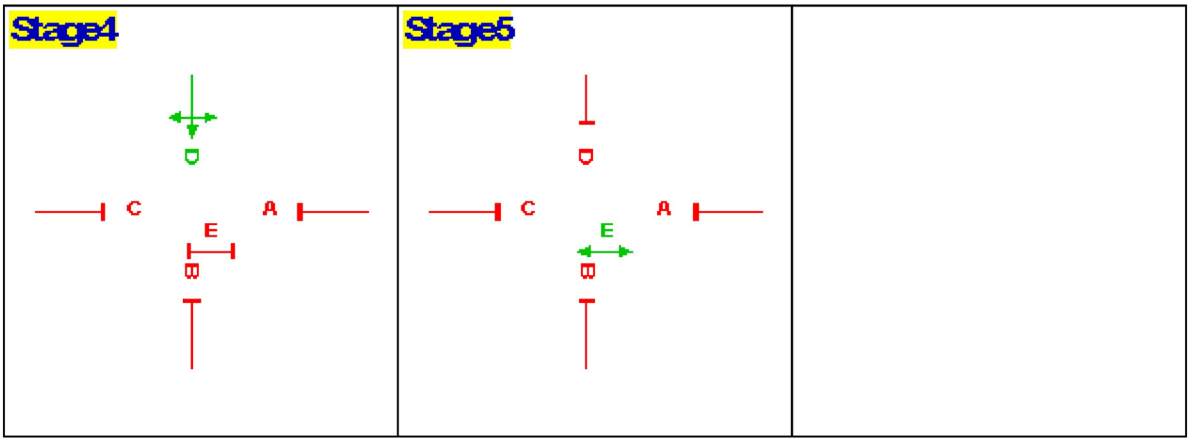
		To				
		A	**B**	**C**	**D**	**E**
From	**A**	-	3	3	3	3
	B	3	-	3	3	3
	C	3	3	-	3	3
	D	3	3	3	-	3
	E	3	3	3	3	-

Stages

Stage	Stage Min Green (s)	Phases In This Stage	Use To Generate Sequences
1	-1	A	Yes
2	-1	B	Yes
3	-1	C	Yes
4	-1	D	Yes
5	-1	E	Yes

Stage Diagrams





Sequences

Sequence	Name	Stages In This Sequence
1		1,2,3,4,5

Constraints

(No constraints)

Traffic

Note: *Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

Configuration

Traffic Scaling Factor	1.00
Time Period (min)	90
Time Segment Length (min)	15
Signal Optimiser Flows	Average
PCUs per Heavy Vehicle	2.00

Demand Sets

Name	Selected	Time Start	Time End	Profile Type	Use Relationship	Relationship
Survey	No	08:00	09:30	ODTAB	No	D1
2027 Base	No	08:00	09:30	ODTAB	No	D1
2027 Base with Dev	No	08:00	09:30	ODTAB	No	D1
2032 Base	No	08:00	09:30	ODTAB	No	D1
2032 Base with Dev	No	08:00	09:30	ODTAB	No	D1
2042 Base	No	08:00	09:30	ODTAB	No	D1
2042 Base with Dev	Yes	08:00	09:30	ODTAB	No	D1

Demand Set7 - 2042 Base with Dev

ODTAB Data (PCU/hr during central 60 min peak period)

		To			
		Arm 1	Arm 2	Arm 3	Arm 4
From	Arm 1	-	16	292	180
	Arm 2	65	-	90	254
	Arm 3	236	21	-	246
	Arm 4	91	92	28	-

Average pedestrian flow on each pedestrian stream (if applicable): 10 ped/hr

Traffic flows (PCU/hr)

Arm	Traffic Stream	Phase	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:15-09:30
1 - Boherboy Road	1	A	366	437	535	535	437	366
2 - Slade Road	1	B	307	366	449	449	366	307
3 - Mill Road	1	C	377	450	552	552	450	377
4 - Garter Lane	1	D	158	189	231	231	189	158
Pedestrians	1	E	8	9	11	11	9	8

Turning Proportions

Arm	Left Movement Percentage	Straight Movement Percentage	Right Movement Percentage
1 - Boherboy Road	3	60	37
2 - Slade Road	22	62	16
3 - Mill Road	49	47	4
4 - Garter Lane	43	44	13

Accident Prediction

4-arm urban accident model

AInFlow (AADTx1000)	0.0
BInFlow (AADTx1000)	0.0
CInFlow (AADTx1000)	0.0
DInFlow (AADTx1000)	0.0
PedAFlow (Pedx1000/12hr)	0.0
PedBFlow (Pedx1000/12hr)	0.0
PedCFlow (Pedx1000/12hr)	0.0
PedDFlow (Pedx1000/12hr)	0.0
NumStagesPerCycle	2
SeparatePedStage	No

***Note:**'AB Flow' is flow from Arm A to Arm B, where arms are labelled clockwise.*

Traffic Calming

Number	Type	OriginalMeanSpeed (kph)	Separation (m)	Width (m)	Length (m)
1	None	20	20	1.0	1.0
2	None	20	20	1.0	1.0
3	None	20	20	1.0	1.0
4	None	20	20	1.0	1.0

***Note:**Speeds/distances are ignored if no traffic calming measures are present.*

4-armurban accident model results

Vehicle only accidents:	0.00accidents per year
Pedestrian only accidents:	0.00accidents per year
Total fatal casualties:	0.00casualties per year
Total serious casualties:	0.00casualties per year
Total slight casualties:	0.00casualties per year

Results

Note:*Duplicate solutions are not shown.*

Sequence1; Objective: CRITICAL CYCLE TIME

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
116.0	0.12	34.73	34.73	33.4

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

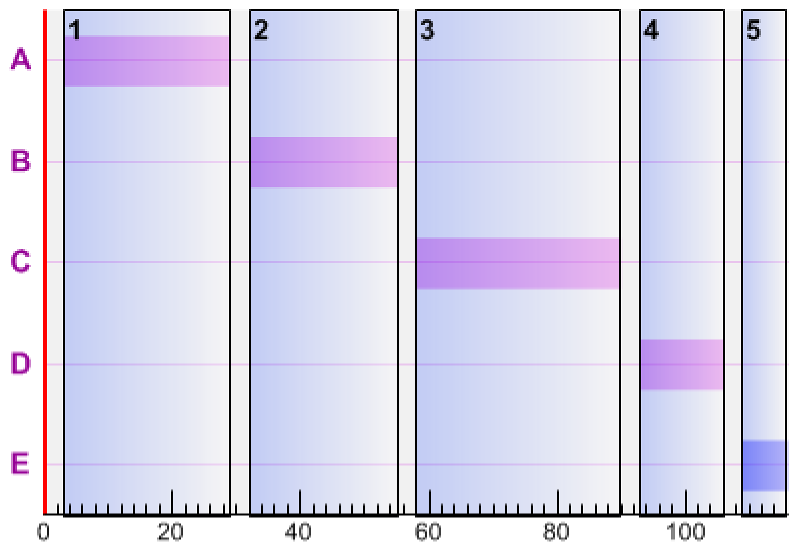
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	3.0	26.0	29.0
2	32.0	23.0	55.0
3	58.0	32.0	90.0
4	93.0	13.0	106.0
5	109.0	7.0	0.0

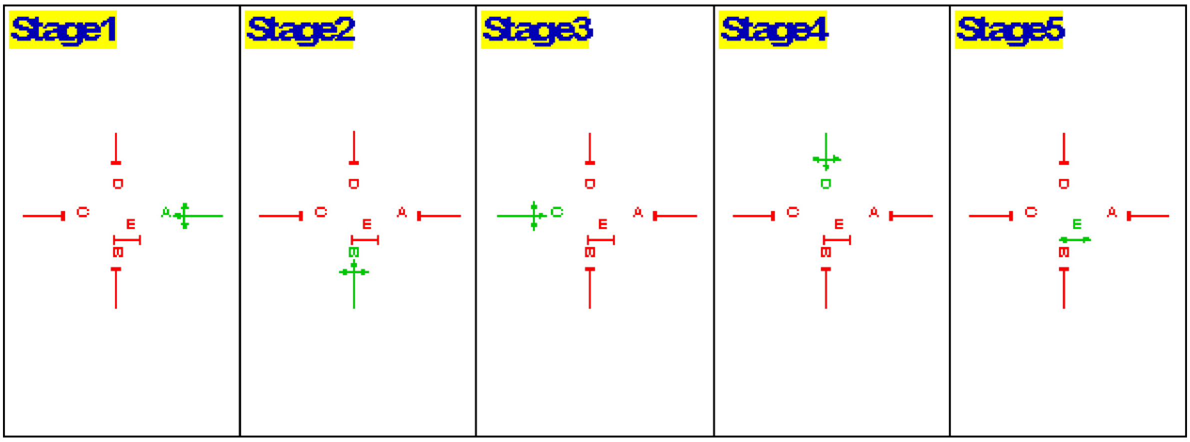
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	3	26.0	29						
B	32	23.0	55						
C	58	32.0	90						
D	93	13.0	106						
E	109	7.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	446	A	27.50	78.14	9.68	89.42	0.65	5.10	17.14	12.04	10.20
2	**1**	374	B	24.50	87.41	9.08	89.84	0.18	5.18	15.45	10.27	8.00
3	**1**	460	C	33.50	75.56	9.65	89.89	0.12	5.39	17.00	11.61	11.70
4	**1**	193	D	14.50	115.48	6.19	88.23	2.01	4.02	9.68	5.66	3.50
Ped	**1**	9	E	8.50	49.89	0.12	1.23	9999.00	0.00	0.27	0.27	0.00

Sequence1; Objective: MAXIMUM CAPACITY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
120.0	-1.39	35.09	35.09	34.6

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

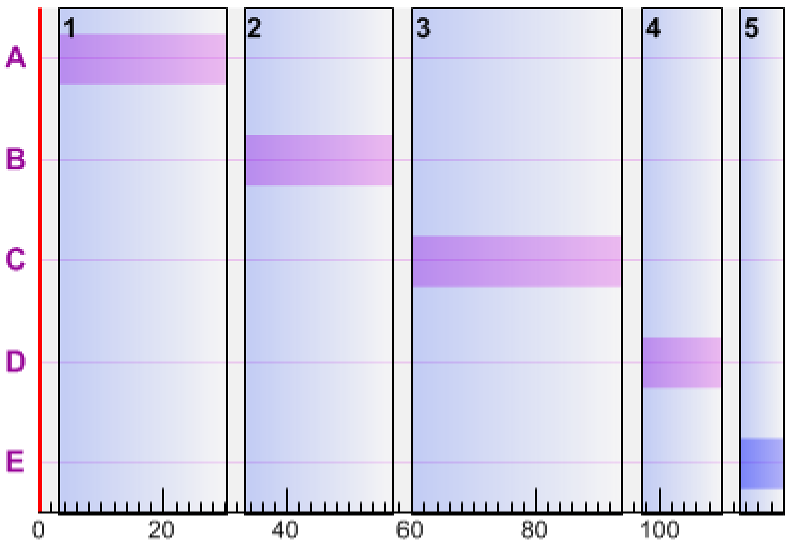
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	3.0	27.0	30.0
2	33.0	24.0	57.0
3	60.0	34.0	94.0
4	97.0	13.0	110.0
5	113.0	7.0	0.0

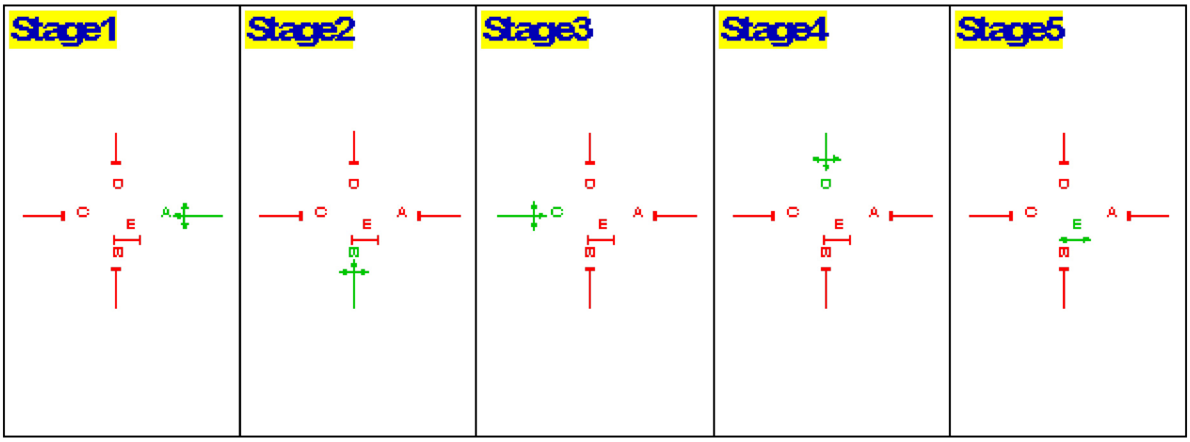
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	3	27.0	30						
B	33	24.0	57						
C	60	34.0	94						
D	97	13.0	110						
E	113	7.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	446	A	28.50	79.03	9.79	89.25	0.84	5.01	17.46	12.45	10.30
2	**1**	374	B	25.50	86.69	9.01	89.29	0.79	4.90	15.51	10.61	8.10
3	**1**	460	C	35.50	69.64	8.90	87.75	2.56	4.34	16.23	11.89	13.00
4	**1**	193	D	14.50	135.53	7.27	91.27	-1.39	5.33	11.22	5.88	3.20
Ped	**1**	9	E	8.50	51.89	0.13	1.27	9999.00	0.00	0.28	0.28	0.00

Sequence1; Objective: MINIMUM DELAY

Summary

Cycle Time (s)	Practical Reserve Capacity (%)	Rate of Delay (PCU)	Weighted Rate of Delay (PCU)	Geometric Delay (PCU-min)
120.0	-0.32	34.54	34.54	33.6

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

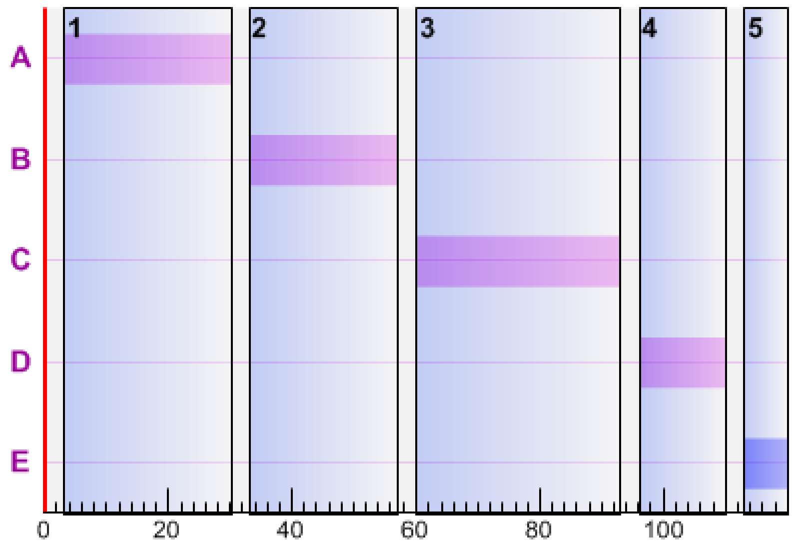
Stage Timings

Stage	Start Time (s)	Duration (s)	End Time (s)
1	3.0	27.0	30.0
2	33.0	24.0	57.0
3	60.0	33.0	93.0
4	96.0	14.0	110.0
5	113.0	7.0	0.0

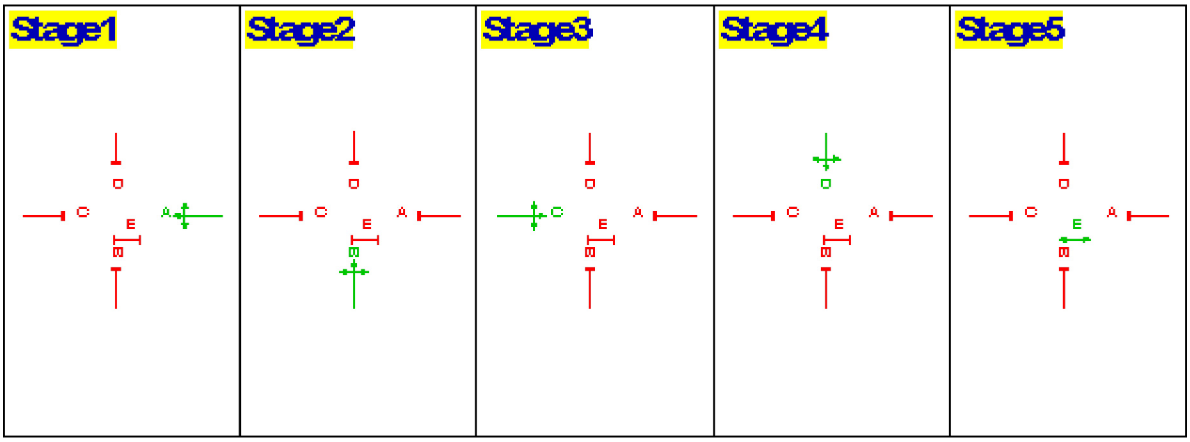
Phase Timings

Phase	Start Time (s)	Duration (s)	End Time (s)	Filter Arrow Time (s)	Indicative Arrow Start (s)	Indicative Arrow Duration (s)	Start Time (s) (2nd green)	Duration (s) (2nd green)	End Time (s) (2nd green)
A	3	27.0	30						
B	33	24.0	57						
C	60	33.0	93						
D	96	14.0	110						
E	113	7.0	0						

Phase Timings Diagram



Final Stage Sequence



Traffic Stream Details

Arm	Traffic Stream	Arrival Rate (PCU/hr)	Controlling Phase	Effective Green (s)	Average Delay (s)	Rate of Delay (PCU)	Degree of Saturation (%)	Practical Reserve Capacity (%)	Queue at End of Green (PCU)	Queue at End of Red (PCU)	Uniform Queue (PCU)	Geometric Delay (PCU-min)
1	**1**	446	A	28.50	79.03	9.79	89.25	0.84	5.01	17.46	12.45	10.30
2	**1**	374	B	25.50	86.69	9.01	89.29	0.79	4.90	15.51	10.61	8.10
3	**1**	460	C	34.50	78.52	10.03	90.29	-0.32	5.63	17.66	12.03	11.50
4	**1**	193	D	15.50	104.09	5.58	85.38	5.41	3.16	8.99	5.83	3.70
Ped	**1**	9	E	8.50	51.89	0.13	1.27	9999.00	0.00	0.28	0.28	0.00

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