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Traffic and Transport Assessment

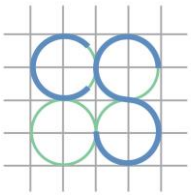
Proposed Mixed-Use Development

Belgard Square East, Belgard Road and Blessington Road, Dublin 24

Client: Ravensbrook Limited

Job No. Q003

June 2022



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PROPOSED MIXED-USE DEVELOPMENT, BELGARD SQUARE EAST, BELGARD ROAD AND BLESSINGTON ROAD, DUBLIN 24

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BS 1192 FIELD	**Q003-CSC-ZZ-XX-RP-C-0003 Traffic & Transport Assessment 20220602**

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Q003	FB	NB	NB	11.10.2021	P1
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1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by Ravensbrook Limited to prepare a Traffic and Transport Assessment to accompany an SHD planning application for a proposed mixed development located on Belgard Square East, Belgard Road and Blessington Road, Dublin 24.

In preparing this report, CS Consulting has made reference to the following:

- South Dublin County Council Development Plan 2016-2022
- Draft South Dublin County Council Development Plan 2022-2028
- Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) 2020
- TII Project Appraisal Guidelines (2011)
- TII Traffic and Transport Assessment Guidelines (2014)
- Trip Rate Information Computer System (TRICS) database
- CSO 2016 Census data
- Design Manual for Urban Roads and Streets (DMURS) 2019
- The Institution of Structural Engineers (IStructE) Design Recommendations for Multi-Storey and Underground Car Parks (2011)
- National Cycle Manual (2011)
- Greater Dublin Area Cycle Network Plan (2015)

The Traffic and Transport Assessment is to be read in conjunction with the engineering drawings and documents submitted by CS Consulting and with the various additional information submitted by the other members of the design team, as part of the planning submission.

1.1 Objective

The objective of this report is to examine the traffic implications associated with the proposed development, in terms of integration with existing traffic in the area. The report determines the impact of the proposed development on the existing road network, in particular through the operational assessment of 5no. key junctions on Belgard Road and Belgard Square. The report also examines the proposed development's vehicular access arrangements, car and bicycle parking provision, site layout, public transport accessibility, and facilities for pedestrians and cyclists.

1.2 Study Methodology

Prior to the preparation of this report, CS Consulting discussed the traffic and transport aspects of the proposed development with representatives of South Dublin County Council and An Bord Pleanála in the course of pre-planning meetings conducted on Thursday 22nd July 2021, Thursday 9th September 2021, Friday 4th February 2022, Friday 11th March 2022 and Thursday 7th April 2022.

The methodology adopted for this report is summarised as follows:

- Receiving environment – A desktop study of the area surrounding the development site has been conducted, examining the nature of the surrounding existing transport infrastructure, the existing public transport services nearby, and proposed future improvements to public transport services and transport infrastructure.
- Traffic flow data – A 12-hour classified vehicular traffic count survey was undertaken on Tuesday the 15th of February 2022 by Idaso Limited, on behalf of CS Consulting. This survey was conducted between 07:00 and 19:00, at 5no. key junctions on the surrounding road network
- Trip generation – A development trip generation assessment has been carried out using data extracted from the Trip Rate Information Computer

System (TRICS) database of traffic surveys, to determine the potential vehicular trips to and from the proposed development site during peak hours.

- Trip distribution – Based upon existing traffic characteristics and the surrounding road network, an appropriate distribution has been assigned to site development vehicular trips across the road network.
- Existing junction assessment – A spreadsheet model was created which contains the base year do-nothing traffic count data described above. The traffic count data were used to develop a TRANSYT model incorporating 5no. surveyed junctions. The performance of these modelled junction was then assessed for the baseline year 2022.
- Future junction operation assessments – Future year traffic forecasts were derived from TII growth factors and development trip generation figures. The performance of each junction within the TRANSYT model was then assessed for the development's proposed year of opening (2025), 5 years after opening (2030), and 15 years after opening (2040; the Design Year assessment).
- Parking – Car and bicycle parking provisions within the proposed development have been assessed with reference to the parking standards set out in the Local Authority development plan and to those given in the 2020 *Design Standards for New Apartments*.

1.3 Structure of Report

The structure of this report corresponds to the various stages outlined above, and the key tasks summarised below:

- Section 2 describes the proposed development location, the existing land use, and the development proposals.

- Section 3 provides an overview of the existing local road network and existing traffic conditions, as well as identifying relevant proposed improvements to local infrastructure or services.
- Sections 4 and 5 detail the analysis as described in the study methodology above. The analysis examines trip generation, trip distribution, and resulting junction operational performance with the development in place.
- Section 6 assesses the proposed car and bicycle parking provision for the development, with reference to Local Authority standards and to the 2020 *Design Standards for New Apartments*.
- Section 7 examines the development's vehicular access arrangements, internal layout, servicing arrangements, nearby public transport services, and pedestrian and cyclist facilities.
- Section 8 presents the opinions from the Planning Authorities.
- Section 9 presents the conclusions of the report.

2.0 SITE LOCATION AND PROPOSED DEVELOPMENT

2.1 Site Location

The proposed development site is located on Belgard Square East, Tallaght, Dublin 24. The site is located in the administrative jurisdiction of South Dublin County Council (SDCC) and has a total area of circa 1.25 ha.

Figure 1 – Site Location
(map data: EPA, NTA, OSM Contributors)

The location of the proposed development site is shown in Figure 1 above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.

The development site is bound by Belgard Square East to the west, Blessington Road to the north, Belgard Road to the east and existing commercial developments to the south.

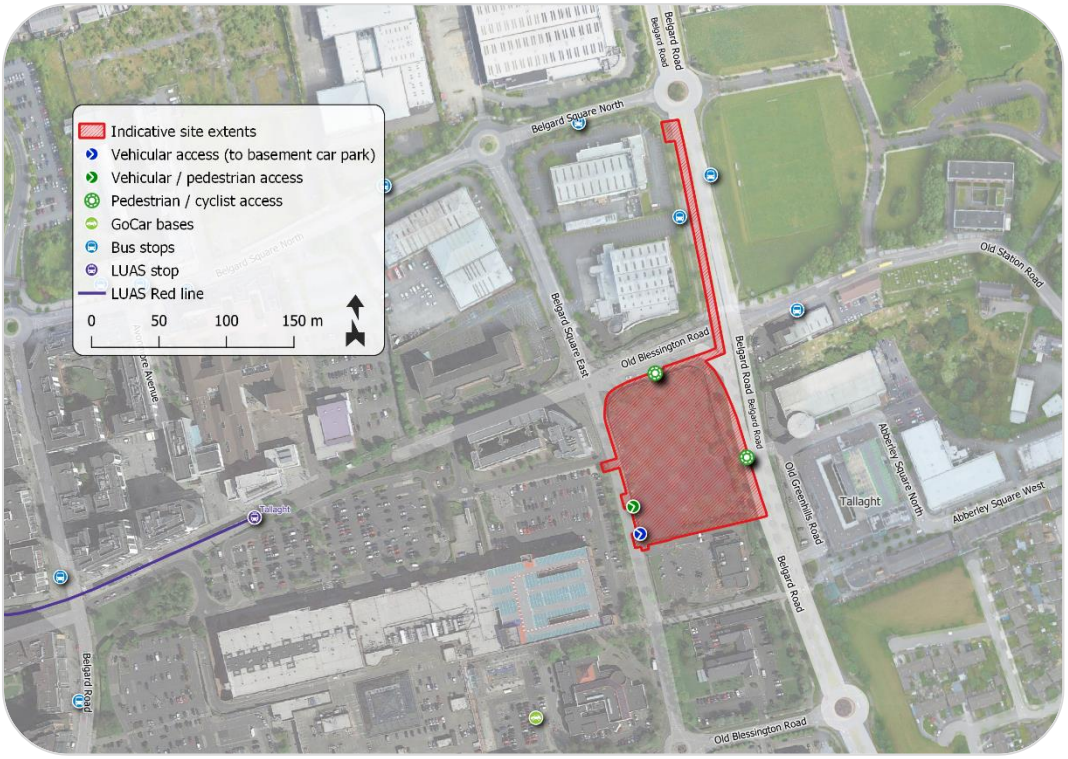


Figure 2 – Surrounding Site Environs
(map data: EPA, NTA, OSM Contributors)

2.2 Existing Land Use

The site is currently a brownfield site consisting primarily of hardstanding surfacing. No existing buildings are present on site. The site does not currently generate any vehicular traffic. A topographical survey has been carried out and survey information is shown on CS Consulting drawing no. **Q003-CSC-ZZ-XX-DR-C-0001**.

2.3 Proposed Development

The proposed development will consist of the demolition of existing boundary wall and construction of:

c. 2,289 sqm of retail/commercial floor space across 10 no. units including retail, restaurant/café and Class 2 financial/professional services and office use, and a crèche (257sqm) at ground and first floor levels;

310 no. build to rent residential apartments including 99 no. one bedroom units, 203 no. 2 bedroom units and 8 no. three bedroom units within a part 6 to part 12 no. storey development across 3 blocks over partial basement;

c. 2,223 sqm of communal external amenity space provided in the form of a ground floor garden and external terraces at fifth, sixth, seventh and eighth floor levels; c. 1,026 sqm of public open space provided in the form of a central courtyard with landscaped areas at site perimeters;

c. 1,785 sqm of resident support facilities and services and amenities provided at basement, ground and first floor levels;

Vehicular access to the basement development from a new access point at Belgard Square East;

A new tertiary route will be provided in the southern part of the site linking Belgard Square East and Belgard Road;

Provision of 130 no. car parking spaces (including 8 no. club car spaces and 6 no. disabled access spaces) at basement level in addition to 5 no. set down spaces (4 no. serving creche) and 1 no. disabled access space at ground level, layby on Belgard Square East, 6 no. motorcycle spaces and a total of 763 no. bicycle parking spaces;

Provision of 4 no. Ø0.3m microwave link dishes to be mounted on 2 no. steel support pole affixed to lift shaft overrun, all enclosed in radio friendly GRP shrouds, together with associated equipment at roof level at Block B;

Provision of 3 no. ESB substations with switch rooms and plant rooms at basement level, hard and soft landscaped areas, bin and bicycle stores, public lighting, attenuation, green roof, plant at roof level, service connections and all ancillary site development works.

3.0 RECEIVING ENVIRONMENT

3.1 Existing Road Network Characteristics

3.2.1 Belgard Square East

- Single carriageway road with a pavement width of approximately 7.0m in the vicinity of the subject development site.
- Regional road with a north-south alignment, leading to the N81 in the south and to the R838 in the north
- Subject to a 50km/h speed limit.
- Raised footpaths are present along both sides of Belgard Road. No bus lanes are present.
- On-road cycle lanes are present along both directions of Belgard road.

3.2.2 Belgard Road

- Dual carriageway road with a lane width of 3.75m, separated by a grass verge. Total carriageway width is 18.5m in the vicinity of the subject development.
- Regional road with a north-south alignment, leading to the N81 in the south and to the N7 in the north.
- Subject to a 50km/h speed limit.
- Raised footpaths are present along both sides of Belgard Road. No bus lanes are present.
- On-street parking is not prohibited along sections of Belgard Road in the vicinity of the subject development site.
- On-road cycle lanes are present along both directions of Belgard road.

3.2.3 Belgard Square North

- Single carriageway road with a pavement width of approximately 9m in the vicinity of the subject development site.

- Link road with an east-west alignment, leading to Belgard Road in the east and to Cookstown Way in the west.
- Subject to a 50km/h speed limit.
- Raised and segregated footpaths are present along both sides of Belgard Square North.
- No bus or cycle lanes are present on Belgard Square North.
- On-street parking is not present on either side Belgard Square North in the vicinity of the subject development site.

3.2.4 Blessington Road

- Dual carriageway road with a pavement width of approximately 17m in the vicinity of the subject development site, which includes two lanes in each direction separated by a 3m concrete verge.
- Link road with an east-west alignment, leading to the Belgard Road in the east and to the Cookstown Way in the west.
- Subject to a 50km/h speed limit.
- Raised and segregated footpaths are present along both sides of Blessington Road.
- No bus or cycle lanes are present on Blessington Road.
- On-street parking is not present on either side Blessington Road in the vicinity of the subject development site.

3.2 Proposed Road Network Improvements

3.2.1 Cycle Network Plan for the Greater Dublin Area

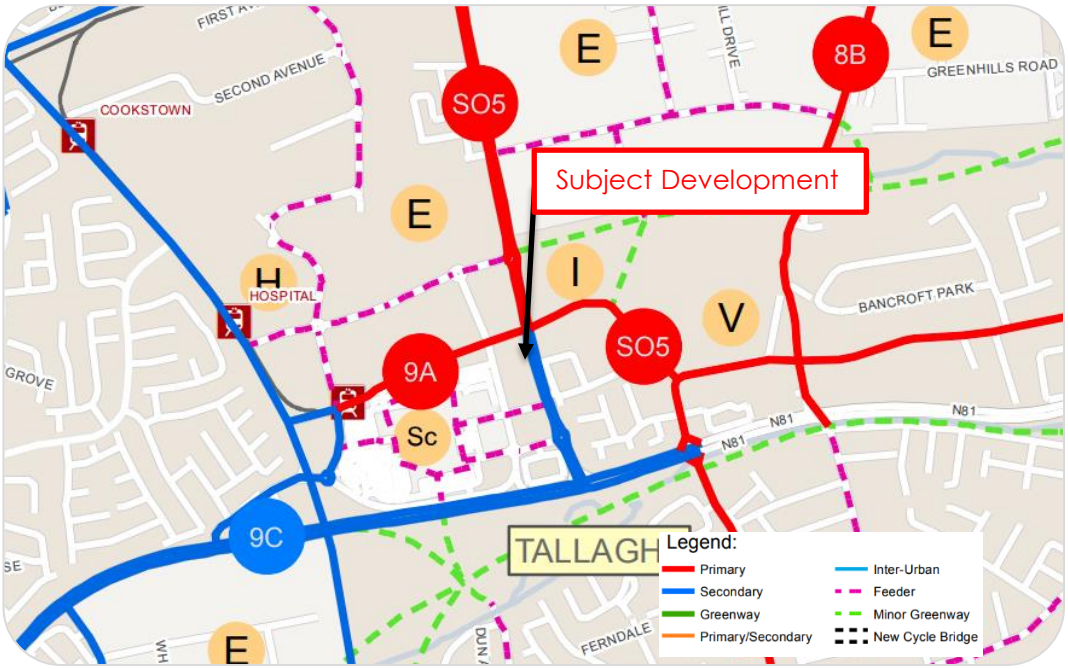


Figure 3 – Extract of Greater Dublin Area Cycle Network Plan mapping
(background imagery source: NTA)

As part of the *Cycle Network Plan for the Greater Dublin Area*, administered by the National Transport Authority, it is proposed that primary cycle route 9A be implemented along Belgard Square North on the northern boundary of the subject development site. Furthermore, it is proposed that secondary cycle route 9C be implemented along Belgard Road on the eastern boundary of the development site. No information is publicly available yet on the proposed design or delivery timeframe of the scheme.

3.2.1 BusConnects Core Bus Corridors

Under the BusConnects Core Bus Corridor (CBC) project, it is proposed to implement Core Bus Corridor no. 9 (Greenhills to City Centre) along Belgard Square North, Belgard Square East, and Blessington Road, passing along the northern boundary of the subject development site.

These BusConnects proposals do not acquire any land take from the development site but do include the following elements that will affect existing local traffic flows:

- implementation of a bus gate at the southern arm of the Belgard Square East / Belgard Square North junction, prohibiting all vehicle movements except buses between Belgard Square East and Belgard Square North.

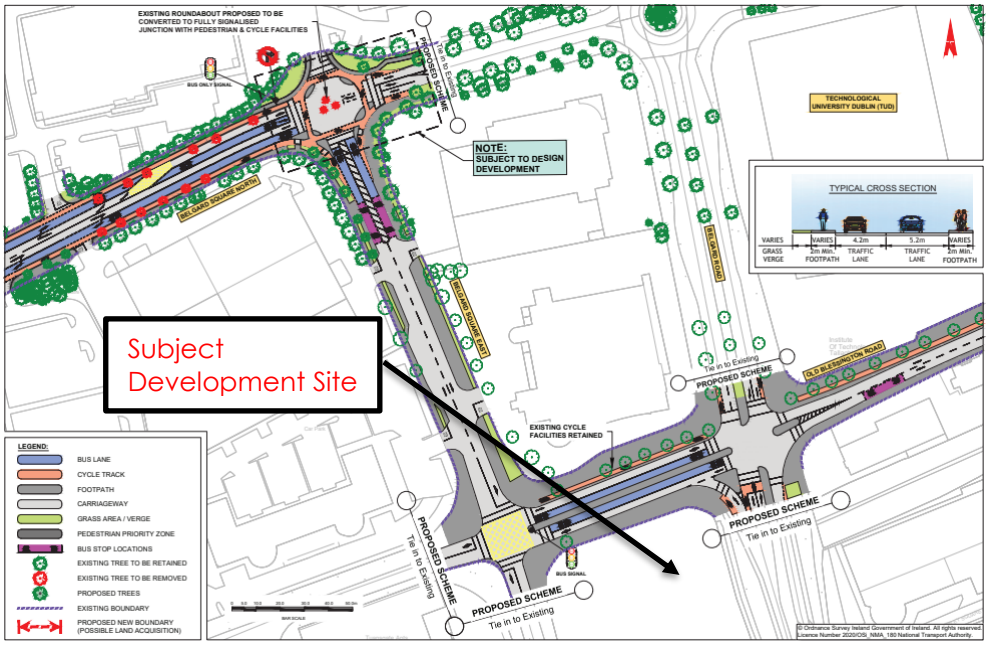


Figure 4 – Core Bus Corridor no.9 Greenhills / City Centre
(background imagery source: NTA)

Please refer to CS Consulting drawing no. Q003-CSC-ZZ-XX-DR-C-0020 for details of how the project aligns with the preferred route option of BusConnects Core Bus Corridor no. 9.

3.3 Nearby Committed Development

2no. active planning permissions has been identified that is considered sufficiently close to the subject development site to have a significant influence

on the traffic flows at the Belgard Square North junctions considered in this report, once developed as permitted:

A. ABP Planning Ref. 301909-18

   Demolition of buildings and construction of Phase 1 of mixed-use residential development comprises of 427no. apartments and 358no. bed space student accommodation, childcare facilities, with vehicular access onto Belgard Square North.

B. ABP Planning Ref. 305763-19

Demolition of existing Industrial buildings and construction of residential development comprises of 2 blocks of 328no. apartments, with vehicular access onto Airton Road.

Please refer to Figure 5 for the location of the committed development.

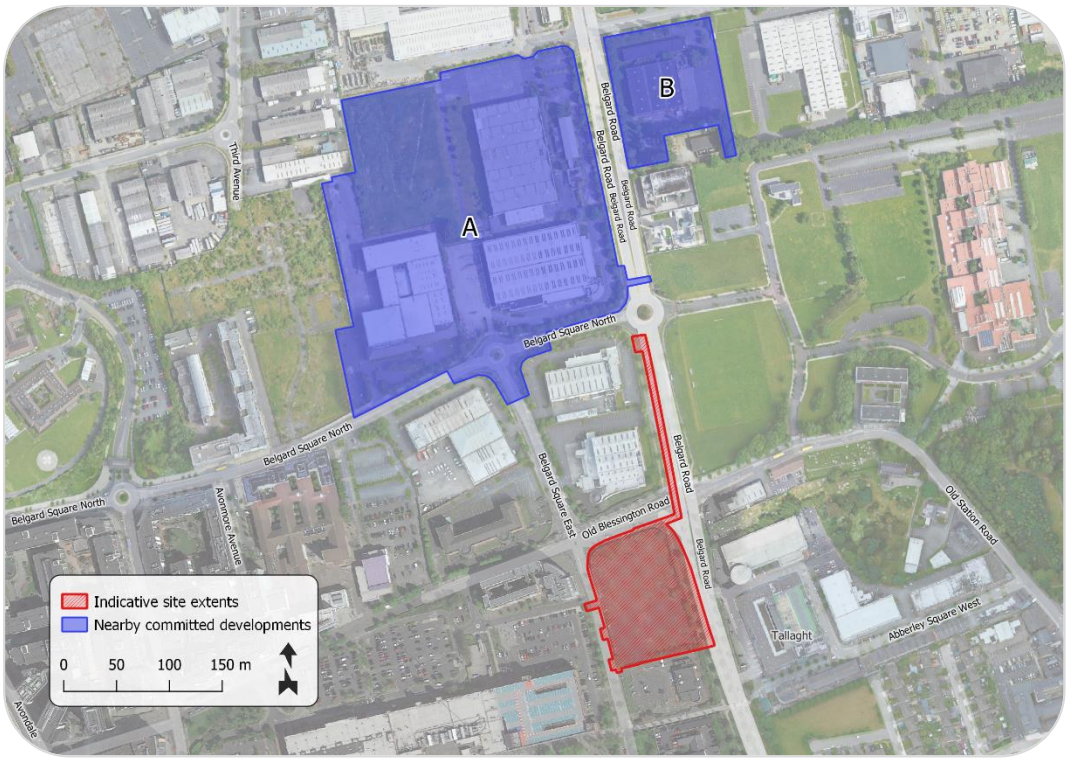


Figure 5 – Relevant nearby committed development
(map data & imagery: DoHPLG, OSM Contributors, Google)

3.4 Existing Traffic Flow

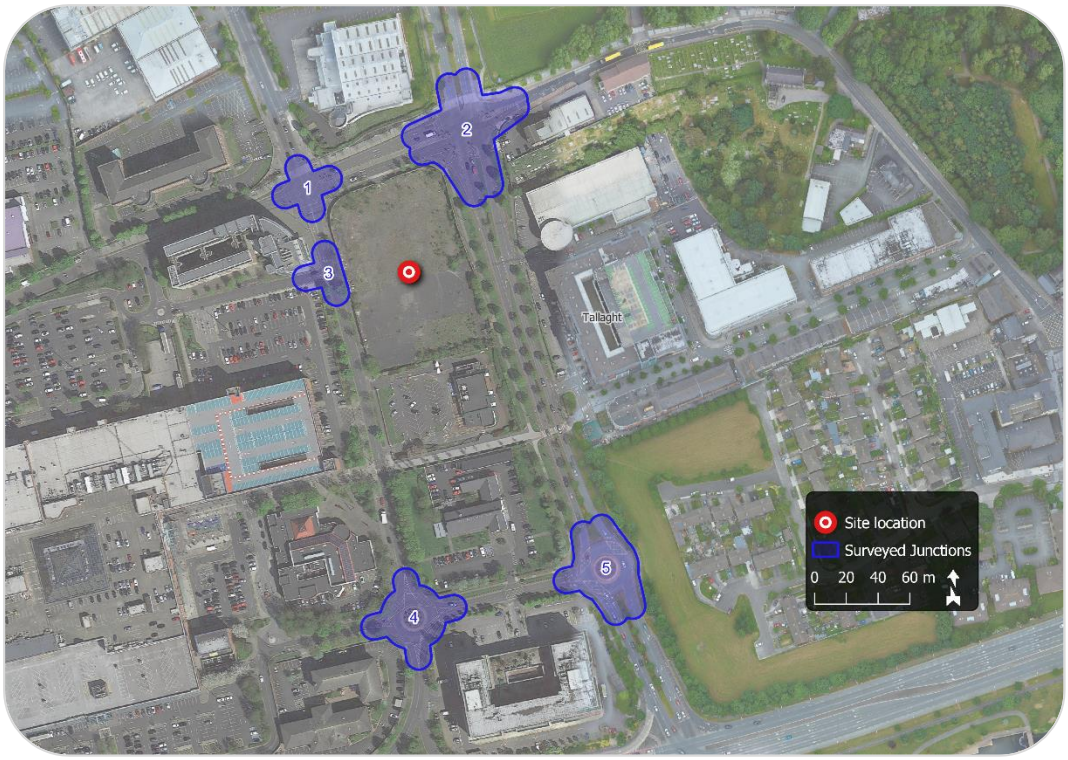


Figure 6 – Surveyed Road Junctions
(map data & imagery: EPA, OSM Contributors, Google)

Full turning movement classified traffic counts were carried out by Idaso Limited, on behalf of CS Consulting, over a 12-hour period (07:00–19:00) on Tuesday the 15th of February 2022. Count information was obtained at the following 5no. junctions (see Figure 6):

J1. Belgard Square East / Blessington Road
(3-arm priority junction)

J2. Belgard Square East / Blessington Road
(4-arm signal-controlled junction)

J3. Belgard Road / The Square parking lane
(3-arm priority junction)

J4. Belgard Square East N / Belgard Square East W / Belgard Square East S
(4-arm roundabout junction)

J5. Belgard Road / Belgard Square

(3-arm roundabout junction)

The raw data from this traffic survey are provided in Appendix A. Refer to Table 1 for existing peak hour traffic flows.

Table 1 – Total Existing Peak Traffic at Surveyed Junctions

Time Period	Total Junction Traffic Movements (Passenger Car Units)				
	J1	J2	J3	J4	J5
AM Peak (08:30-09:30)	583	1084	528	1056	1675
PM Peak (15:45-16:45)	706	1247	587	1153	1852

3.5 Future Year Background Traffic Growth

The operational impact of traffic on the road network within the proposed development's area of influence has been assessed for the following years:

- 2022 Baseline year
- 2025 Assumed opening year
- 2030 5 years after opening
- 2040 Design year (15 years after opening)

Unit 5.3 of the TII *Project Appraisal Guidelines* (PE-PAG-02017 *Travel Demand Projections*) has been used to apply growth factors to the existing surveyed background traffic flows, to obtain traffic flows for future year junction assessments. The TII annual growth rates applied are given in Table 2, and the resultant cumulative growth in background traffic for each assessment year is given in Table 3.

Table 2 – TII Central Growth Rates (Light Vehicles)

Geographic Area	Background Traffic Growth per Year		
	2016-2030	2030-2040	2040-2050
Dublin Metropolitan Area	+ 1.62%	+ 0.51%	+ 0.44%

Table 3 – Predicted Background Traffic Growth [1]

2025 Year of opening	2030 Opening year +5	2040 Opening year +15
+ 4.9%	+ 13.7%	+ 19.7%

3.6 Road Traffic Collision Data

Figure 7 – Recorded road traffic collisions on surrounding road network
(map data and imagery: RSA, OSM Contributors, Yandex)

The locations of recorded road traffic collisions in the vicinity of the development site over the 11-year period from 2005 to 2016 (inclusive), which have been collated by the Road Safety Authority, are shown in Figure 7. These indicate a low frequency of traffic collisions in the immediate vicinity of the subject development site.

[1] Cumulative percentage increases over 2022 baseline traffic levels.

3.7 Pedestrian and Cyclist Accessibility

One of the specific objectives of the South Dublin County Development Plan 2016-2022 is to implement, at appropriate locations, pedestrian permeability schemes and enhancements (noted at section 6.3.2 of the 2016 Development plan). The focus on pedestrian permeability is continued into the Draft South Dublin County Development Plan 2022-2028 which contains the following objectives related to pedestrian and cyclist accessibility and permeability;

- "To promote measures to improve pedestrian and cycle safety and convenience, including new or enhanced permeability links within all areas and pedestrianisation within identified centres".
- "To make active travel a credible alternative choice to car-based transport, and to facilitate the 10-minute neighbourhood, certain critical factors need to be in place:
    - A permeable pedestrian and cycling network that allows for multiple direct connections between key destinations such as residential areas, shops, schools, employment centres and public transport links; and
    - An attractive and safe pedestrian and cycling environment where high quality facilities are provided supporting their use by all ages and abilities."
- "To ensure that connectivity for pedestrians and cyclists is maximised and walking and cycling distances are reduced by promoting compact growth and permeability in the design and layout of new development areas."
- "The Development Plan contains policies and objectives which promote measures that have the potential to reduce the climate impact of transport by encouraging a shift from private motorised transport to walking, cycling and public transport. Measures to achieve this modal shift include the following:

- Implementation of permeability projects to facilitate active travel and connectivity to public transport;"

Existing pedestrian facilities on Blessington Road, Belgard Square East, Belgard Road, Belgard Square North and other neighbouring streets in the vicinity of the development site are generally in good condition. Raised footpaths and public lighting are in place along all streets in the vicinity of the subject development site.

The proposed development facilitates pedestrian and cyclist permeability and accessibility as a key design aim. Filtered permeability for pedestrians and cyclists shall be provided to Belgard Road and Blessington Road to the east and north of the subject development respectively. Within the subject development, 2.0m pedestrian footpaths shall be provided and shared pedestrian cyclist surfaces shall have a minimum width of 3.5m. Refer to the Mobility Management Plan document submitted with this application for more details on the Pedestrian and Cyclists Accessibility.

4.0 TRAFFIC GENERATION AND TRIP DISTRIBUTION

4.1 Proposed Development Trip Generation

Trip generation factors from the TRICS database have been used to predict the trip generation to and from the proposed development, once completed, for both the AM and PM peak hour periods. Full details of the TRICS information used in the assessments are provided in **Appendix B**.

The proposed development comprises the following elements relevant to vehicular trip generation:

- 310no. apartments;
- Crèche with a gross floor area of 267 m^2 and
- retail units with a combined gross floor area of 1939m^2.

For a full schedule of the proposed development, please refer to the architectural documentation submitted with this application.

The development's retail units are not considered to have any potential to generate external vehicular trips to and from the development, given that they are expected to serve the immediate vicinity (within walking/cycling distance) and shall have no allocated car parking. These units have therefore been excluded from the vehicular trip generation calculations detailed here.

The TRICS trip rates is calculated only for residential units and crèche,

The TRICS sub-category '03 Residential / C – Flats Privately Owned' has been employed, being the most appropriate for this type of development. This is described in the TRICS land use category definitions as follows:

"Housing developments where at least 75% of households are privately owned. Of the total number of units, 75% must also be flats (sum of flats in blocks and "split" houses), with no more than 25% of the total units being "non-split" houses. Includes properties that are privately owned and then privately rented. Note that "Help to Buy" dwellings or any other where

residents have equity in a property are considered to be privately owned. Trip rates are calculated by Site Area, Dwellings, Housing Density, or Total Bedrooms."

The TRICS sub-category '04 Education / D – Nursery' has been employed, being the most appropriate for this type of development. This is described in the TRICS land use category definitions as follows:

"*Pre-school centres. Trip rates are calculated by Gross Floor Area, Pupils, or Employees."*

The TRICS trip rates for the proposed development have been selected from the above category, restricted insofar as possible to similar edge-of-city-centre locations, and further refined with reference to 2016 CSO census data on the basis of:

- the population within 1 mile of the development site (35,000 approx.);
- the population within 5 miles of the development site (430,000 approx.);
- the aggregate mean car ownership rate within 5 miles of the development site (1.2 cars per household).

The trip rates selected are given in Table 4 and the resultant proposed residential development trip generation figures obtained are given in Table 5.

Table 4 – TRICS Apartment Trip Generation Rates

Time Period	Arrivals per hour per unit	Departures per hour per unit
AM Peak	0.019	0.160
PM Peak	0.135	0.075

Table 5 – Proposed Apartment Trip Generation from TRICS

Time Period	Arrivals	Departures	Total Trips
AM Peak	6	50	56
PM Peak	42	24	66

The trip rates selected are given in Table 6 and the resultant proposed crèche trip generation figures obtained are given in Table 7.

Table 6 – TRICS Crèche Trip Generation Rates

Time Period	Crèche Arrivals	Crèche Departures
AM Peak	3.846	2.473
PM Peak	1.099	2.404

Table 7 – Proposed Crèche Trip Generation from TRICS

Time Period	Arrivals	Departures	Total Trips
AM Peak	10	7	17
PM Peak	3	6	9

Table 8 – Proposed Overall Trip Generation from TRICS

Time Period	Arrivals	Departures	Total Trips
AM Peak	16	57	73
PM Peak	45	30	75

4.2 Proposed Development Trip Distribution

A cordon method has been employed to establish the future distribution of traffic to be generated by the proposed development. This is based upon the existing surveyed mainline traffic flows at key locations on the surrounding street network.

Figure 8 – Subject development traffic origin/destination points
(map data and imagery: OSi, OSM Contributors, Google)

As shown in Figure 8, vehicular traffic arriving to or departing from the development site is expected to leave or enter the immediate surrounding area via one of the following streets:

(A) Belgard Square East to/from the north (at surveyed junction J1);

(B) Belgard Road to/from the north (at surveyed junction J2);

(C) Old Blessington Road to/from the east (at surveyed junction J2);

(D) Belgard Road to/from the south (at surveyed junction J5);

(E) Belgard Square East to/from the south (at surveyed junction J4);

The predicted distribution of vehicular trips to and from the subject development has been established following the proportions of the surveyed inbound and outbound mainline traffic flows at these five points on the local road network, in each of the peak hour periods.

Table 9 and Table 10 give the proportions and numbers of trips from/to each network point, and the other surveyed junctions through which they will pass. All vehicular trips arriving or departing shall use the proposed development access at the site's western boundary (numbered as junction J6).

Table 9 – Distribution of Development Arrival Trips

Network Entry Point	Gateway junction	Other Junctions Passed Through	% of AM Trips	% of PM Trips	Number of AM Trips	Number of PM Trips
A	1	3	5.95%	7.15%	1	4
B	2	1,3	19.44%	29.53%	3	13
C	2	1,3	2.58%	5.49%	0	3
D	5	4	54.72%	40.85%	9	23
E	4	-	17.31%	16.99%	3	10

Table 10 – Distribution of Development Departure Trips

Network Exit Point	Gateway junction	Other Junctions Passed Through	% of AM Trips	% of PM Trips	Number of AM Trips	Number of PM Trips
A	1	3	19.27%	15.92%	10	5
B	2	1,3	30.27%	19.10%	16	8
C	2	1,3	18.74%	21.72%	3	1
D	5	4	22.16%	34.33%	11	12
E	4	-	9.56%	8.93%	5	3

It is noted that, under the scenario in which BusConnects Core Bus Corridor no. 9 has been implemented along Belgard Square East (as described in sub-section 3.2), some traffic routes will be slightly different but the proportion to/from each network point shall remain the same.

4.3 Reassignment of Existing Traffic due to BusConnects Measures

As described in sub-section 3.2, the measures proposed for Core Bus Corridor no. 9 under the BusConnects project include implementation of a bus gate at

the southern arm of the Belgard Square North / Belgard Square east junction to the north of the subject development site, prohibiting all vehicle movements except buses between Belgard Square East and Belgard Square North.

4.4 Proportional Increases in Traffic

Table 11 shows the absolute and proportional increases in peak hour traffic flows that shall result from the proposed development at each of the 5no. surveyed junctions shown in Figure 6 (page 14).

Table 11 – Changes in Traffic Flows at Junctions

Surveyed Junction No.	Background Traffic Flows at Junction (Year 2025) [2]		Development-Related Trips Through Junction		Proportional Change	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
J1	583	706	33	34	5.66%	4.82%
J2	1084	1247	22	25	2.03%	2.00%
J3	528	587	33	34	6.25%	5.79%
J4	1056	1153	28	48	2.65%	4.16%
J5	1675	1852	20	35	1.19%	1.89%

The TII *Traffic and Transport Assessment Guidelines* (PE-PDV-02045) advise that Transport Assessments should generally be applied where traffic to and from a development is predicted to exceed 10% of the existing background traffic on the adjoining road (or 5% at sensitive locations).

As shown in Table 11, the subject development shall result in an increase of more than 5% in total traffic flows in either peak hour period at junctions no. J1 and J3, with the existing road network structure. Additionally, the

[2] Total projected vehicle movements (PCU/hour) in the development's opening year, with the existing road network structure, including committed development.

implementation of the subject development access junctions shall result in the proportional increases in traffic shown in Table 12.

Table 12 – Changes in Traffic Flows at Proposed Junctions

Junction No.	Background Traffic Flows at Junction Location (Year 2025) [3]		Development-Related Trips Through Junction		Proportional Change	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
J6	469	460	49[4]	75[4]	10.4%	16.3%
J7	469	460	13[5]	13[5]	2.8%	2.8%

Consequently, only the following junctions have been selected for detailed operational assessment, which is described in Section 5:

- The existing J1 signalised junction
- the existing J3 priority junction
- the proposed development basement access junction (J6) on Belgard Square East
- the proposed development surface junction (J7) on Belgard Square East

These junctions have been selected on the basis of their proximity to the subject development.

4.5 Committed Development Trip Generation and Trip Distribution

The vehicular trips predicted to be generated by the 2no. committed development identified in section 3.2.1 has been included in background traffic flows for future assessment years.

[3] Total projected vehicle movements (PCU/hour) in the development's opening year, with the existing road network structure, including committed development.

[4] Residential trips only

[5] Creche-related trips only

4.5.1 Committed Development A

The trip rates for Committed Development (A) Belgard Garden SHD are taken from the Traffic Impact Assessment prepared by OCSC for a weekday traffic flow. The TRICS trip rates for the development were identified between 08:15-09:15 (AM Peak hour) and 16:45-17:45 (PM Peak hour).

Table 13 – Committed Development (A) Trip Generation

Committed Development [6] (A)	Peak Period	Arrivals	Departures	Total Trips
Residential	AM	62	186	248
	PM	204	125	329

For the Committed Developments (A), the entrance vehicular access is on to Belgard Square North. The traffic generated by the Committed Development A shall travel via splits as mentioned in the Traffic Impact Assessment prepared by OCSC under ABP Planning Ref. 301909-18.

4.5.2 Committed Development B

The trip rates for Committed Development (B) Airton Plaza SHD are taken from the Traffic Impact Assessment prepared by Martin Rogers Consulting Limited for a weekday traffic flow. The TRICS trip rates for the development were identified between 08:00-09:00 (AM Peak hour) and 17:00-18:00 (PM Peak hour)

Table 14 – Committed Development (B) Trip Generation

Committed Development [7] (B)	Peak Period	Arrivals	Departures	Total Trips
Apartments / Retails / Crèche	AM	36	86	122
	PM	75	43	118

[6] See Figure 5, page 13.
[7] See Figure 5, page 13.

For the Committed Developments (B), the entrance vehicular access is on to Airton Road. The traffic generated by the Committed Development B shall travel via splits as mentioned in the Traffic Impact Assessment prepared by Martin Rogers Consulting Limited under ABP Planning Ref. 305763-19. At junctions not covered by these analyses, committed development trips distributed according to background junction splits.

5.0 OPERATIONAL ASSESSMENT

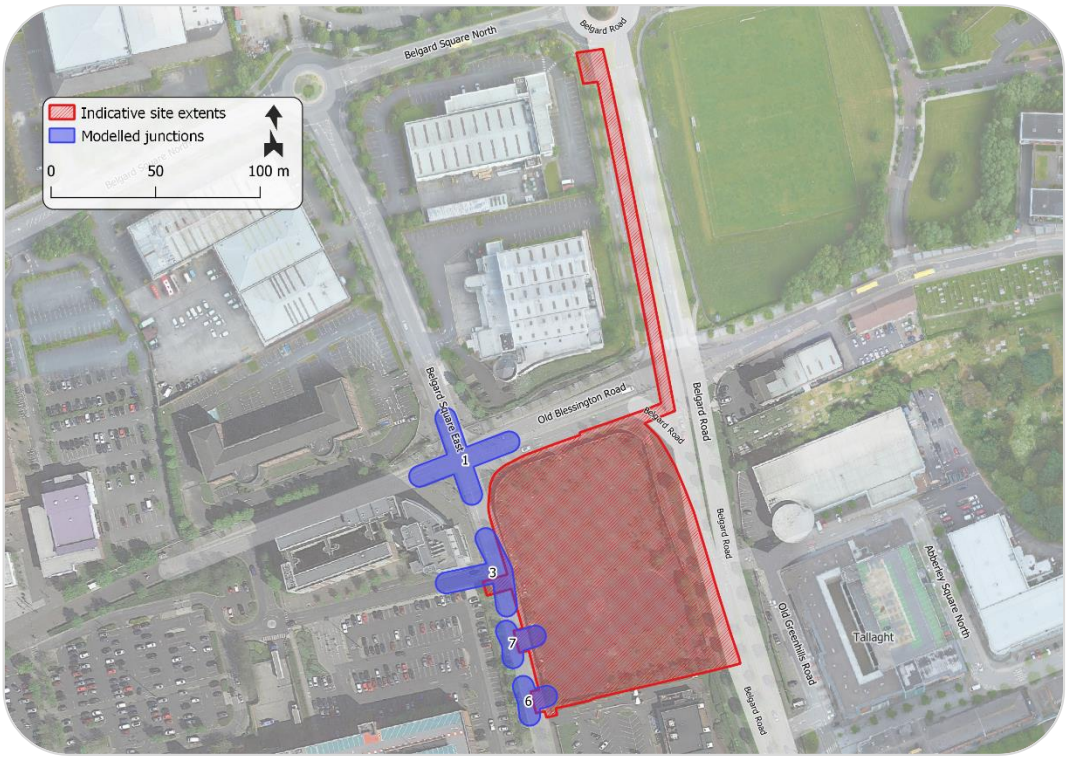


Figure 9 – Location of modelled junctions
(*map data & imagery: OSM Contributors, Google*)

To determine the likely traffic impact of the proposed development, operational assessments of 4no. junctions on Belgard Square East have been undertaken using the computer program TRANSYT, for both the AM peak hour and the PM peak hour.

The following junctions have been modelled and assessed:

J1. Belgard Square East / Old Blessington Road
(4-arm signal-controlled junction)

J3. Belgard Square East / The Square Car Park
(3-arm priority junction)

J6. Belgard Square East / Development Basement Access
(3-arm priority junction)

J7. Belgard Square East / Development Crèche Access

(3-arm priority junction)

5.1 Assessment Scenarios

The performance of this junction has been assessed under the following scenarios, using the existing and predicted traffic flows given in **Appendix D**:

- 2022 (base year) – surveyed traffic conditions;
- 2025 (planned year of opening) – with & without subject development;
- 2030 (5 years after opening) – with & without subject development;
- 2040 (design year) – with & without subject development

In addition to the assessment scenarios outlined above which are undertaken based on the existing road network, a sensitivity assessment of Junction 1 was undertaken to account for modifications to surrounding road junctions implemented under BusConnects proposals. Due to the nature of modifications proposed it is not expected that Junctions J3, J6, or J7 shall experience changes in traffic volumes as a result of BusConnects. However it is expected that Junction J1 shall experience changes in traffic volumes and as such, these have been assessed.

5.2 Definitions

Degree of Saturation:

The ratio of flow to capacity (also known as RFC) on a link or traffic stream. When calculating this value, account is taken of blocking effects and oversaturation effects.

Mean Maximum Queue:

The highest estimated mean number of Passenger Car Units (PCUs) queued in any lane of a junction approach link, averaged over the entire analysis period.

Mean Delay per PCU:

The average delay incurred by a vehicle on a junction approach link or traffic stream, as a result of having to queue at signals or having to give way at a priority junction.

Practical Reserve Capacity:

The percentage by which the arrival rate on a traffic stream could increase before the stream would be at practical capacity (i.e. 90% saturation)

5.3 Junction J1 Assessment Results – Without BusConnects

The following tables give the TRANSYT modelling results, for each of the assessment scenarios, at the existing junction of Belgard Square and Old Blessington Road.

- Arm A: Belgard Square E (to north)
- Arm B: Old Blessington Road (to east)
- Arm C: Belgard Square E (to south)
- Arm D: Old Blessington Road (to west)

The assessment results show that this junction currently operates within its effective capacity on all approaches during both the AM and PM peak periods, with minimal vehicle queues and moderate delays. All junction approaches are shown to continue operating within their effective capacities past the year 2040, with vehicle queues and delays on all junction approaches at levels generally similar to those currently existing.

In each of the future years assessed, the addition of the vehicular traffic generated by the proposed development is shown to have only a slight impact on junction performance, adding less than 1 PCU to any mean approach queue and no more than 4 seconds to the mean vehicle delay on any approach.

Table 15 – Junction 1 Assessment Results

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2022 assessment (baseline conditions)									
A	S/L	26	38	1.1	1.7	1.1	1.7	46	50
	R	19	13	0.8	0.6	0.8	0.5	45	44
B	S/L/R	60	55	8.3	7.4	6.9	6.2	34	33
C	S/L/R	18	56	1.4	5.0	1.3	4.5	36	44
D	S/L/R	46	55	3.2	3.9	3.0	3.6	46	49
2025 – opening year assessment – WITHOUT subject development									
A	S/L	27	42	1.2	1.9	46.6	51.0	231	114
	R	20	14	0.8	0.6	44.9	43.8	356	534
B	S/L/R	64	58	8.9	7.8	35.2	33.3	41	56
C	S/L/R	19	60	1.4	5.3	36.1	45.7	386	51
D	S/L/R	51	61	3.6	4.4	47.3	51.2	76	48
2025 – opening year assessment – WITH subject development in place									
A	S/L	29	54	1.3	2.6	47.1	56.5	210	66
	R	20	14	0.8	0.6	44.9	43.8	356	534
B	S/L/R	70	61	10.2	8.5	37.6	34.3	29	48
C	S/L/R	19	60	1.4	5.3	36.1	45.7	386	51
D	S/L/R	52	62	3.6	4.6	47.4	52.1	74	44
2030 assessment – WITHOUT subject development									
A	S/L	30	46	1.3	2.1	47.2	52.4	204	97
	R	21	15	0.9	0.7	45.2	44.1	329	483
B	S/L/R	69	63	10.1	8.8	37.4	34.9	30	43
C	S/L/R	21	65	1.6	5.9	36.4	47.9	335	40
D	S/L/R	55	65	3.9	4.9	48.7	53.9	63	37
2030 assessment – WITH subject development in place									
A	S/L	31	58	1.4	2.9	47.7	58.6	186	55
	R	21	15	0.9	0.7	45.2	44.1	329	483
B	S/L/R	75	66	11.4	9.4	40.3	36.0	20	37
C	S/L/R	21	65	1.6	5.9	36.4	47.9	335	40
D	S/L/R	56	67	4.0	5.1	48.9	54.9	62	34

Table 16 – Junction 1 Assessment Results

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2040 – design year assessment – WITHOUT subject development									
A	S/L	31	48	1.4	2.3	47.6	53.4	192	87
	R	22	16	1.0	0.7	45.4	44.2	305	461
B	S/L/R	73	66	11.0	9.4	39.2	36.1	24	36
C	S/L/R	22	69	1.7	6.5	36.5	50.1	317	31
D	S/L/R	58	68	4.2	5.3	49.9	55.7	55	32
2040 – design year assessment – WITH subject development									
A	S/L	33	60	1.5	3.1	48.1	60.3	175	49
	R	22	16	1.0	0.7	45.4	44.2	305	461
B	S/L/R	78	69	12.4	10.1	42.7	37.4	15	30
C	S/L/R	22	69	1.7	6.5	36.5	50.1	317	31
D	S/L/R	58	70	4.2	5.4	50.1	56.9	54	29

5.4 Junction J3 Assessment Results - Without BusConnects

The following tables give the TRANSYT modelling results, for each of the assessment scenarios, at the existing junction of Belgard Square East and The Square car park.

- Arm A: Belgard Square East (to south)
- Arm B: The Square car park (to west)
- Arm C: Belgard Square East (to north)

The assessment results show that this junction currently operates within its effective capacity on all approaches during both the AM and PM peak periods, with minimal vehicle queues and moderate delays. All junction approaches are shown to continue operating within their effective capacities past the year 2040, with vehicle queues and delays on all junction approaches at levels generally similar to those currently existing.

In each of the future years assessed, the addition of the vehicular traffic generated by the proposed development is shown to have only a slight impact on junction performance, adding less than 1 PCU to any mean approach queue and no more than 0.5 seconds to the mean vehicle delay on any approach.

Table 17 – Junction J3 Assessment Results

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2022 – base year assessment – surveyed traffic flows									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	8	35	0.09	0.53	9.63	12.56	974	159
C	S/L/R	14	15	0.16	0.18	4.34	4.01	566	493
2025 – opening year assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	9	37	0.09	0.57	9.74	13.08	935	145
C	S/L/R	15	17	0.17	0.2	4.44	4.09	506	441
2025 – opening year assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	9	37	0.1	0.59	9.94	13.39	916	141
C	S/L/R	15	18	0.18	0.22	4.44	3.97	492	399
2030 assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	10	40	0.11	0.67	10.09	14.07	830	123
C	S/L/R	16	18	0.19	0.22	4.56	4.19	453	398
2030 assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	10	41	0.11	0.69	10.3	14.42	813	120
C	S/L/R	17	20	0.2	0.24	4.57	4.08	441	361
2040 – design year assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	10	43	0.11	0.74	10.3	14.82	772	110
C	S/L/R	17	19	0.21	0.24	4.66	4.27	421	370
2040 – design year assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	11	44	0.12	0.76	10.51	15.22	755	106
C	S/L/R	18	21	0.21	0.26	4.67	4.17	409	337

5.5 Junction J6 Assessment Results - Without BusConnects

The following tables give the TRANSYT modelling results, for each of the assessment scenarios, at the existing junction of Belgard Square East and Development Access.

- Arm A: Belgard Square East (to north)
- Arm B: Development Access (to east)
- Arm C: Belgard Square East (to south)

The assessment results show that this junction currently operates within its effective capacity on all approaches during both the AM and PM peak periods, with minimal vehicle queues and moderate delays. All junction approaches are shown to continue operating within their effective capacities past the year 2040, with vehicle queues and delays on all junction approaches at levels generally similar to those currently existing.

In each of the future years assessed, the addition of the vehicular traffic generated by the proposed development is shown to have only a slight impact on junction performance, adding less than 1 PCU to any mean approach queue and no more than 10 seconds to the mean vehicle delay on any approach.

Table 18 – Junction J6 Assessment Results

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2022 – base year assessment – surveyed traffic flows									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	18	13	0.22	0.14	2.43	2.29	405	614
2025 – opening year assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	19	14	0.23	0.16	2.46	2.31	375	567
2025 – opening year assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	10	5	0.11	0.06	9.49	8.6	780	1553
C	S/L/R	22	20	0.28	0.26	2.74	3.09	313	341
2030 assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	21	15	0.26	0.17	2.51	2.34	339	516
2030 assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	10	5	0.11	0.06	9.6	8.68	770	1538
C	S/L/R	23	22	0.3	0.27	2.78	3.11	286	317
2040 – design year assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	22	15	0.27	0.18	2.54	2.36	318	485
2040 – design year assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	10	6	0.12	0.06	9.68	8.74	763	1527
C	S/L/R	24	22	0.32	0.29	2.82	3.12	269	303

5.6 Junction J7 Assessment Results - Without BusConnects

The following tables give the TRANSYT modelling results, for each of the assessment scenarios, at the existing junction of Belgard Square East and Development Access.

- Arm A: Belgard Square East (to north)
- Arm B: Development Surface Access (to east)
- Arm C: Belgard Square East (to south)

The assessment results show that this junction currently operates within its effective capacity on all approaches during both the AM and PM peak periods, with minimal vehicle queues and moderate delays. All junction approaches are shown to continue operating within their effective capacities past the year 2040, with vehicle queues and delays on all junction approaches at levels generally similar to those currently existing.

In each of the future years assessed, the addition of the vehicular traffic generated by the proposed development is shown to have only a slight impact on junction performance, adding less than 1 PCU to any mean approach queue and no more than 9 seconds to the mean vehicle delay on any approach.

Table 19 – Junction J7 Assessment Results

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2022 – base year assessment – surveyed traffic flows									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	18	13	0.22	0.14	2.43	2.29	405	614
2025 – opening year assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	19	14	0.23	0.16	2.46	2.31	375	567
2025 – opening year assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	1	1	0.01	0.01	8.71	8.15	12330	6589
C	S/L/R	20	15	0.26	0.18	2.62	2.44	340	484
2030 assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	21	15	0.26	0.17	2.51	2.34	339	516
2030 assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	1	1	0.01	0.01	8.8	8.22	12196	6530
C	S/L/R	22	17	0.28	0.2	2.67	2.47	309	445
2040 – design year assessment – WITHOUT subject development									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	0	0	0	0	0	0	-	-
C	S/L/R	22	15	0.27	0.18	2.54	2.36	318	485
2040 – design year assessment – WITH subject development in place									
A	S/L/R	0	0	0	0	0	0	-	-
B	S/L/R	1	1	0.01	0.01	8.88	8.27	12096	6489
C	S/L/R	23	17	0.3	0.21	2.7	2.49	290	420

5.7 Sensitivity Assessment Junction J1 Results – With BusConnects

The following tables give the TRANSYT modelling results, for each of the assessment scenarios, at the existing junction of Belgard Square and Old Blessington Road.

- Arm A: Belgard Square E (to north)
- Arm B: Old Blessington Road (to east)
- Arm C: Belgard Square E (to south)
- Arm D: Old Blessington Road (to west)

The assessment results show that this junction currently operates within its effective capacity on all approaches during both the AM and PM peak periods, with minimal vehicle queues and moderate delays. All junction approaches are shown to continue operating within their effective capacities past the year 2040, with vehicle queues and delays on all junction approaches at levels generally similar to those currently existing.

In each of the future years assessed, the addition of the vehicular traffic generated by the proposed development is shown to have only a slight impact on junction performance, adding less than 1 PCU to any mean approach queue and no more than 4 seconds to the mean vehicle delay on any approach.

Table 20 – Junction 1 Assessment Results – With BusConnects

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2022 assessment (baseline conditions)									
A	S/L	43	53	3.9	5.0	38.7	41.4	112	70
	R	15	15	1.2	1.2	33.9	33.9	500	500
B	S/L/R	67	61	8.9	7.7	39.0	36.6	35	49
C	S/L/R	20	63	1.4	5.2	38.0	49.8	355	42
D	S/L/R	38	38	1.5	1.5	51.1	51.1	140	140
2025 – opening year assessment – WITHOUT subject development									
A	S/L	48	61	4.4	6.0	39.9	44.2	88	47
	R	16	16	1.3	1.3	34.0	34.0	468	468
B	S/L/R	71	64	9.6	8.3	40.7	37.7	27	41
C	S/L/R	21	67	1.5	5.7	38.2	51.9	325	34
D	S/L/R	40	40	1.7	1.7	52.1	52.1	123	123
2025 – opening year assessment – WITH subject development in place									
A	S/L	49	68	4.5	6.9	40.2	47.3	84	33
	R	16	16	1.3	1.3	34.0	34.0	468	468
B	S/L/R	77	67	11.1	9.0	44.6	39.2	17	34
C	S/L/R	21	67	1.5	5.7	38.2	51.9	325	34
D	S/L/R	40	40	1.7	1.7	52.1	52.1	123	123
2030 assessment – WITHOUT subject development									
A	S/L	51	66	4.8	6.6	40.9	46.2	75	37
	R	17	17	1.4	1.4	34.2	34.2	431	431
B	S/L/R	76	69	10.9	9.4	44.2	40.1	18	30
C	S/L/R	23	73	1.6	6.5	38.5	56.1	293	23
D	S/L/R	43	43	1.8	1.8	53.2	53.2	109	109
2030 assessment – WITH subject development in place									
A	S/L	53	72	5.0	7.6	41.2	50.0	71	25
	R	17	17	1.4	1.4	34.2	34.2	431	431
B	S/L/R	83	73	12.6	10.1	49.9	41.9	9	24
C	S/L/R	23	73	1.6	6.5	38.5	56.1	293	23
D	S/L/R	43	43	1.8	1.8	53.2	53.2	109	109

Table 21 – Junction 1 Assessment Results - With BusConnects

Arm	Direction	Degree of Saturation (%)		Mean Maximum Queue (PCU)		Mean Delay per PCU (seconds)		Practical Reserve Capacity (%)	
		AM	PM	AM	PM	AM	PM	AM	PM
2040 – design year assessment – WITHOUT subject development									
A	S/L	54	69	5.1	7.0	41.7	47.8	67	31
	R	18	18	1.5	1.5	34.3	34.3	398	398
B	S/L/R	80	73	11.9	10.1	47.4	41.9	12	24
C	S/L/R	24	77	1.7	7.0	38.7	59.7	270	17
D	S/L/R	46	46	1.9	1.9	54.4	54.4	96	96
2040 – design year assessment – WITH subject development									
A	S/L	55	75	5.2	8.2	42.0	52.3	64	20
	R	18	18	1.5	1.5	34.3	34.3	398	398
B	S/L/R	87	76	14.1	10.9	55.4	44.2	4	18
C	S/L/R	24	77	1.7	7.0	38.7	59.7	270	17
D	S/L/R	46	46	1.9	1.9	54.4	54.4	96	96

6.0 PARKING

The subject development comprises the following elements:

- 310 apartments comprising 99 no. 1-bed, 203 no. 2-bed and 8 no. 3-bed units;
- 267m^2 Crèche and;
- Commercial units with a combined total gross floor area (GFA) of 1,939m^2 (non-inclusive of creche)

6.1 Car Parking Provision

The car parking provision of the proposed development has been assessed with respect to the *South Dublin County Council Development Plan 2016–2022*, which defines the standard maximum car parking provision for new developments by land use type. The subject development is categorised as zone 2 (residential) for parking purposes under the Development Plan as it is located within 400m of a high quality public transport service (Tallaght Luas Stop, Dublin Bus Route no. 27). The maximum car parking provision rates remain unchanged in the draft *South Dublin County Council Development Plan 2022–2028*. Table 22 below shows the car parking standards applicable to the proposed development and illustrates that the total car parking provision does not exceed the maximum number permitted by the Local Authority development plan.

Table 22 – South Dublin Development Plan Car Parking Provision

Dwelling Type	Car Parking Maxima	Quantum	Max. Parking Provision	Proposed Provision
1-bed apartment	0.75 space per unit	99 units	74 spaces	122 spaces
2-bed apartment	1 spaces per unit	203 units	203 spaces	
3-bed apartment	1.25 spaces per unit	8 units	10 spaces	

Commercial	1 space per 25m² GFA	1939m² GFA	78 spaces	1 space
Creche	0.5 per classroom	8 classrooms	4 spaces	4 spaces
Car Club	n/a	n/a	n/a	8 spaces
Total			369 spaces	135 spaces

It is proposed to provide a total of 135no. allocated car parking spaces within the development, including 122no. allocated residential spaces and 8no. residential car club spaces within the development basement car park. 5no. spaces are located at surface level of which 4no. are assigned for the creche set down. 1no. additional disabled accessible space is proposed on the tertiary Route for use by development users. This represents 0.39 parking ratio per residential unit (non-inclusive of spaces reserved for shared vehicles and spaces assigned to the creche/commercial uses).

The *South Dublin County Development Plan 2016-2022* states the following in relation to the car parking standards outlined in Table 22 above:

The number of spaces provided for any particular development should not exceed the maximum provision. The maximum provision should not be viewed as a target and a lower rate of parking may be acceptable subject to:

- The proximity of the site to public transport and the quality of the transport service it provides.
- The proximity of the development to services that fulfil occasional and day to day needs.
- The existence of a robust and achievable Workforce Management or Mobility Management Plan for the development.
- The ability of people to fulfil multiple needs in a single journey.
- The levels of car dependency generated by particular uses within the development.

- The ability of residents to live in close proximity to the workplace.
- Peak hours of demand and the ability to share spaces between different uses.
- Uses for which parking rates can be accumulated.
- The ability of the surrounding road network to cater for an increase in traffic.

As well as the *SDCC Development Plan Guidelines* there are also the *Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities,)* published by the Department of Housing, Planning and Local Government in December 2020, with a different set of standards. The Design Standards for New Apartments recommends parking provision for apartments based on the development location type. Table 23 below shows these guidelines and illustrates how the proposed development do not exceed the parking provision which is proposed for less accessible urban locations.

Table 23 – Design Standards for New Apartments Overall Car Parking Provision

Dwelling Type	Car Parking Maxima	Quantum	Parking Provision	Proposed Provision
1-bed apartment	1.25 spaces per unit	99 units	124 spaces	122 spaces
2-bed apartment	1.25 spaces per unit	203 units	254 spaces	
3-bed apartment	1.25 spaces per unit	8 units	10 spaces	
Total			388 spaces	122 spaces

The subject development site is located in a Central/Accessible Location.

In addition, The *Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities)*, gives the following guidance on the provision of residential car parking for sites within central/accessible locations:

"In larger scale and higher density developments, comprising wholly of apartments in more central locations that 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 in or adjoining city cores or at a confluence of public transport systems such [as] rail and bus stations located in close proximity.

"These locations are most likely to be in cities, especially in or adjacent to (i.e. within 15 minutes walking distance of) city centres or centrally located employment locations. This includes 10 minutes walking distance of DART, commuter rail or Luas stops or within 5 minutes walking distance of high frequency (min 10 minute peak hour frequency) bus services."

As detailed in the Mobility Management Plan framework document submitted under separate cover in support of this planning application, the development site is located within 5 minutes' walk of the Tallaght (The Square) stop on the Luas Red Line, which is served by frequent trams to and from Dublin city centre, and within a 5-minute walk of a high-quality bus route, the no.27 bus, located north of the proposed development, on Belgard Square North.

Additionally, a residential car-share club shall be established, providing 8no. car share vehicles for use by development residents, the implementation of this scheme is expected to further reduce demand for car parking spaces.

The proposed development is therefore considered an appropriate candidate for a limited residential car parking provision, in accordance with the standards and guidelines set out by South Dublin County Council and by the Department of Housing, Planning and Local Government.

6.2 Disabled-Accessible Car Parking

The *South Dublin County Development Plan 2016–2022* and draft *South Dublin County Development Plan 2022-2028* require that disabled-accessible parking be provided in new developments in accordance with Part M of the Building Regulations. Table 24 applies this requirement to the proposed development.

Table 24 – Accessible Car Parking Provision

Proposed Car Parking Provision	Minimum Required Proportion	Accessible Spaces Required	Accessible Spaces Proposed
135 spaces	5%	7 spaces	8 spaces

The accessible car parking within the proposed development therefore fulfils the minimum provision required by the Local Authority development plan and draft plan and is therefore deemed appropriate.

6.3 Bicycle Parking Provision

763no. bicycle parking spaces shall be provided within the subject development of which 529no. shall serve the development residents' long-term provision. 20no. staff bicycle spaces are provided at basement level. 214no. spaces shall serve visitors to the proposed development. Visitor spaces shall be provided at surface level for the use of residential visitors and staff/patrons of the commercial uses proposed within the subject development. 159no. spaces at surface level are proposed to serve the residential visitors to the proposed development. The remaining 55no. surface level spaces shall serve the visitors of the café, restaurant, retail, and office uses.

The overall bicycle parking provision of the proposed development has been assessed with respect to the South *Dublin County Council Development Plan 2016–2022*, which defines the minimum standard bicycle parking provision for new developments by land use type. Table 25 below shows the standards applicable to the proposed development, illustrating that its proposed bicycle

parking provision exceeds the requirements of the Local Authority development plan.

Table 25 – South Dublin Development Plan Cycle Parking Provision

Dwelling Type		Parking Standard	Quantum	Min. Parking Provision	Proposed Provision
Apartment	Short Stay	1 space per 10 units	310 units	31 spaces	159 spaces
	Long Stay	1 space per 5 units	310 units	62 spaces	529 spaces
Commercial (Retail Comparison)		1 space per 50m² GFA	1939m² GFA	39 spaces	55 spaces
Crèche		1 per 5 staff	21 staff	4 spaces	20 spaces
Total				136 spaces	763 spaces

The bicycle parking within the proposed development therefore exceeds the minimum provision required by the Local Authority development plan.

The draft *South Dublin Development Plan 2022-2028* requires that the following rates of bicycle spaces for residential units are provided:

- 1 per bedroom for long term residential apartment.
- 1 per two bedrooms for short-stay residential apartment.

Bicycle parking requirements for commercial units and creche remain unchanged.

The *Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities),* published by the Department of Housing, Planning and Local Government in December 2020, states that:

"A general minimum standard of 1 cycle storage space per bedroom shall be applied. For studio units, at least 1 cycle storage space shall be

provided. Visitor cycle parking shall also be provided at a standard of 1 space per 2 residential units. Any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/enlargement, etc."

Table 26 illustrates the application of these Apartment guidelines recommendations to the proposed development.

Table 26 – Design Standards for New Apartments Overall Cycle Parking Provision

Dwelling Type		Parking Standard	Quantum	Min. Parking Provision	Proposed Provision
Apartment	Short Stay	1 space per 2 units	310 Units	155 spaces	155 spaces
	Long Stay	1 space per 1 bedroom	529 bedrooms	529 spaces	529 spaces
Sub-total				684 spaces	684 spaces
Commercial Cycle Spaces				43 spaces	75 spaces
Total				727 spaces	763 spaces

Additional cycle parking spaces shall be provided to accommodate the commercial uses within the subject development. Therefore, the quantum of cycle spaces provided within the development exceeds the requirements of the South Dublin County Council Development Guidelines and is in line with the quantum required by the policy document Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities).

6.4 Motorcycle Parking Requirements

The provision of motorcycle parking within the subject development has been determined as a proportion of the total development car parking provision in order to support the proposed development modal split. Table 27 below applies this requirement to the proposed development.

Table 27 – Motorcycle Parking Provision

Proposed Car Parking Provision	Standard Required Proportion	Motorcycle Spaces Required	Motorcycle Spaces Proposed
Development Total			
135 spaces	4%	5	6

Draft South Dublin County Development Plan 2022-2028 includes the following policy objective;

"to promote appropriate parking arrangements for specific user requirements including disabled drivers, motorcycles and scooters in town and district centres, public transport nodes and other destinations."

6.5 Electric Vehicle Charging Provision

The draft *South Dublin County Development Plan 2022–2028* sets out the standard requirement for the provision of Electric Vehicle (EV) charging spaces in new developments, as a proportion of the total development car parking provision. Table 28 applies this requirement to the proposed development.

Table 28 – EV Parking Provision

Proposed Car Parking Provision	Required Proportion	EV Spaces Required	EV Spaces Proposed
135 spaces	20%	27	27

27no. car parking spaces within the proposed development shall be equipped with facilities for the charging of electric vehicles. All other car parking spaces within the development shall be 'future-proofed' by the inclusion of ducting and/or cabling to permit the rapid future installation of additional EV charging points, as defined in the ESB ecars specification document no. 18017 (*Public Charge Points*, last reviewed February 2012).

6.6 Residential Car-Share Parking

It is proposed to establish a car-sharing club for residents of the development. 8no. dedicated shared vehicles shall be provided and maintained under the development's management scheme.

A recent study of car clubs in Scotland, commissioned and published by CoMoUK [8], concluded that a single shared car may make as many trips in a day as 14 private cars. On this basis, the 8no. shared car parking spaces may therefore be considered to reduce parking demand within the development by approximately 104no. spaces.

6.7 Car Parking Management

Access to the underground car parking area, shall be regulated by means of gated system. Authorised development occupants (residents and staff) shall gain access by means of an RFID key fob or similar automated system.

Car parking spaces shall be designated by category of use and identifiable through colour-coding, road markings, and/or signage. All internal car parking spaces within the development (including the 8no. accessible spaces and 8no. car club spaces) shall be controlled by the development's Management Company. Parking spaces shall not be assigned to individual apartment units; spaces shall instead be allocated and/or leased to residents on the basis of availability and need, in part by means of a permit/lottery system, in order to optimise the use of parking spaces.

Refer to the Car Parking Management Stretegy document submitted with this application for details on car parking management.

[8] *Car Club Annual Survey for Scotland 2019/2020*, available from https://como.org.uk/shared-mobility/shared-cars/why/

7.0 ACCESS, LAYOUT, PEDESTRIANS & CYCLISTS, SERVICING, PUBLIC TRANSPORT

7.1 Development Access

The development layout design put forward is for an internal shared street accessing 4no. creche car parking spaces, a loading bay/set down area, a disabled accessible car parking space, and ESB substations. A second vehicular access point to the basement is proposed off Belgard Square East. A dedicated pedestrian/cyclists access is present at the eastern boundary of the subject development site on to Belgard Road. This access is reserved for use emergency vehicles, and pedestrians and cyclists. This shall therefore improve pedestrian and cyclist safety in this location.

It has been ensured that visibility splays of at least 49m (Y-value) are achieved from a set-back of 2.4m (X-value), in compliance with Section 4.4.5 of the *Design Manual for Urban Roads and Streets* (DMURS).

Refer to drawing **Q003-CSC-ZZ-XX-DR-C-0007** and Figure 10 for details.

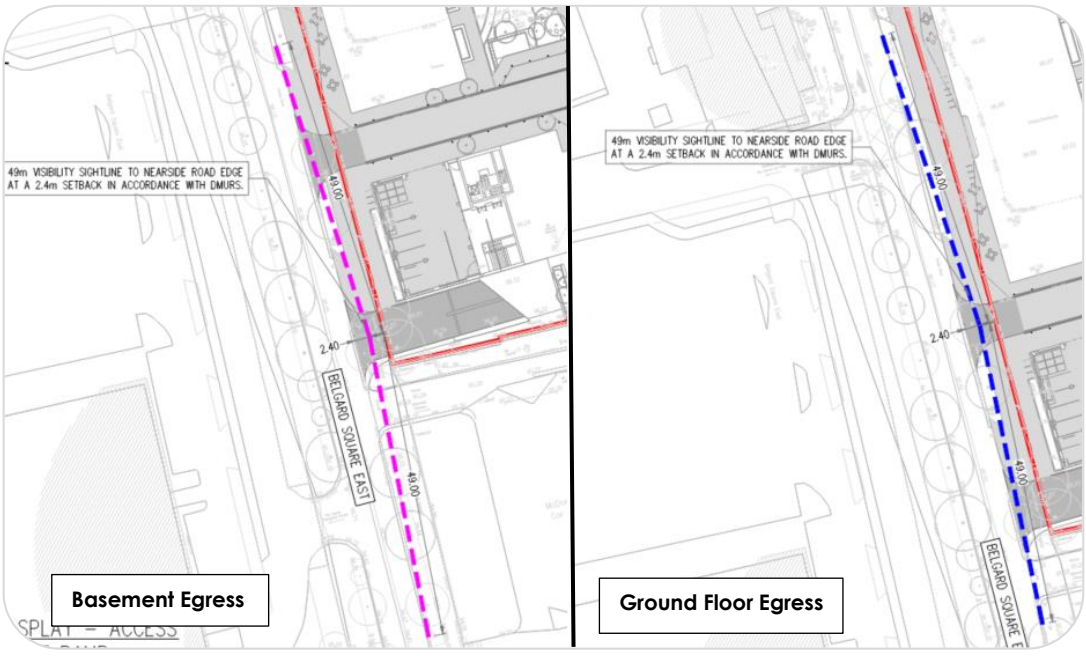


Figure 10 – Proposed Basement and Tertiary Route Visibility Splay
(map data & imagery: CS Consulting)

7.2 Internal Site Layout

Access to the development at surface level will be via a two-way shared surface tertiary route, 6.0m in width, flanked on either side by dedicated pedestrian footpaths with a minimum width of 2.0m, which exceeds the minimum footpath width allowed in the DMURS. The tertiary route shall provide a local access function to the subject development. Priority is provided for active travel modes within the subject development with flush kerbs, filtered permeability and shared surfaces throughout. The proposed vehicles access ramp from Belgard Square East, minimum 7.0m in width (wall to wall), with 0.3m buffer on either road edge, shall provide two-way access to the 130no. car parking spaces located at basement level. An aisle with of minimum 6.95m shall be provided within the development basement in accordance with Table 4.3 of the *Design Recommendations for Multi-Storey and Underground Car Parks (Fourth Edition, 2011)*.

Standard car parking spaces within the subject development shall be 2.4m wide and 4.8m long.

7.3 Pedestrians & Cyclists

Pedestrian access to the development shall be accommodated via the proposed new vehicle access point on Belgard Square East. Additional access points are proposed on Blessington Street to the north of the subject development and to the west from Belgard Road. Pedestrian and cyclist permeability through the site is provided by means of the east-west shared tertiary route and a dedicated pedestrian/cyclist link in a north-south direction, linking the proposed tertiary route to Blessington Road. A bicycle stair is proposed in proximity to the development's primary access on Belgard Square, providing access to the subject development residential bicycle stores at basement level. Lift access to basement level is also proposed to the north of the subject development site.

759no. bicycle parking spaces shall be provided within the subject development of which 529no. are intended to serve the development residents' long-term provision. 20no. staff bicycle spaces are provided at basement level. 214no. spaces are intended to serve visitors to the proposed development. Visitor spaces shall be provided at surface level for the use of residential visitors and staff/patrons of the commercial uses proposed within the subject development. 159no. spaces at surface level are proposed to serve the residential visitors to the proposed development. The remaining 55no. surface level spaces are intended to serve the visitors of the café, restaurant, retail, and office uses.

7.4 Development Servicing and Waste Collection

It is proposed that a waste collection point will be provided at the northern edge of the proposed internal tertiary route, allowing for refuse collection to occur internally within the subject development site. Refer to CS Consulting drawing no. **Q003-CSC-ZZ-XX-DR-C-0009** for details of swept path analysis of refuse vehicles manoeuvring at surface level within the proposed development.

2no. loading bays are proposed to facilitate servicing of the proposed commercial/retail units. 1no. on Belgard Square East and 1no. on the proposed tertiary route.

7.5 Swept Path Analysis

Swept path analyses of the proposed development have been carried out for cars circulating within the development's ground level and basement level car parks. These analyses, provided on drawings **Q003-CSC-ZZ-XX-DR-C-0010** and **Q003-CSC-ZZ-XX-DR-C-0011** respectively within this planning application, indicate that the design of the development accesses and the internal layout can accommodate these vehicle movements.

An emergency access is proposed on Belgard Road which shall be reserved for use by emergency vehicles or occasional servicing vehicles. An emergency management plan has been prepared outlining the proposed use and maintenance of this junction. Please refer to **Appendix E.**

7.6 Public Transport

A summary of light rail and bus services in the vicinity of the subject development site is given below. For further details of local public transport services, refer to the Mobility Management Plan framework document submitted under separate cover in support of this application.

7.6.1 Light rail services

The Luas light rail network consists of two principal lines, which connect to one another at Abbey Street/Marlborough Street/O'Connell Street in Dublin City Centre.

- LUAS Red Line (E-W) Dublin Docklands to Tallaght/Saggart
- LUAS Green Line (N-S) Broombridge to Bride's Glen

The subject development site is located within a 5-minute walk of the Tallaght (The Square) stop on the Luas Red Line. Light rail services operating to and from this stop connect it directly to the Docklands in the northeast, via Dublin city centre; interchange with the Luas Green Line is possible at Abbey Street. Trams serve the Tallaght Luas stop at minimum intervals of 2-3 minutes at peak times.

Table 29 – Luas Red Line Light Rail Services at Tallaght Stop

Direction	Destinations	Weekday Services	Minimum Peak Interval
Eastbound	Dublin Docklands	114	3 min
Westbound	Tallaght/Saggart	116	2 min

7.6.2 Light rail capacity

The policy document *Sustainable Urban Housing; Design Standards for New Apartments* defines Luas as "high-capacity urban public transport" (page 5).

The Luas Red Line is operated using Alstom Citadis 401 trams (70% low-floor configuration), each with a maximum capacity of 358no. passengers. On average, a tram serves the Tallaght Luas stop every 8 minutes in either direction between 07:00 and 10:00, and every 9 minutes in either direction between 16:00 and 19:00.

As shown in Table 30, the average peak period capacities of the Luas Red Line are therefore:

- 2,685 passengers per hour (in either direction) during the AM peak period
- 2,387 passengers per hour (in either direction) during the PM peak period

Table 30 – Luas Red Line Light Rail Peak Capacity

Direction	**Destinations**	**Average Peak Interval**	**Average Peak Capacity** (passengers/hour)
AM Peak Period (07:00-10:00)			
Eastbound	Dublin Docklands	8 min	2,685
Westbound	Tallaght/Saggart	8 min	2,685
PM Peak Period (16:00-19:00)			
Eastbound	Dublin Docklands	9 min	2,387
Westbound	Tallaght/Saggart	9 min	2,387

These are the average peak capacities, each applicable to a 3-hour period. Luas frequencies (and therefore hourly capacities) are higher still at the times of greatest Luas demand: 08:00-09:00 in the morning and 17:00-18:00 in the evening. As the exact number of trams serving a given

stop during these two hourly periods is not specified, however, the true peak capacity cannot be determined.

7.6.3 Bus services

Bus stops on Belgard Square North, Belgard Road, and Blessington Road, all within a 5-minute walk of the subject site, are served by 7no. bus routes, of which 2no. routes operate at high-frequency intervals of 10 minutes during peak times. Details of these bus routes are given in Table 31.

Table 31 – Bus Services within 5-minute Walk of Site

Route No.	Operator	Destinations	Weekday Services [9]	Peak Interval
27	Dublin Bus	Clare Hall / Jobstown	100	10 mins
54a	Dublin Bus	Pearse Street / Ellensborough	33	30 mins
65	Dublin Bus	Poolbeg Street / Blessington	15	1 hour
75 / 75a	Go-Ahead	Dún Laoghaire / Tallaght	35	30 mins
76 / 76a	Go-Ahead	Chapelizod / Tallaght	51	15 mins
77a	Dublin Bus	Ringsend Road / Citywest	52	10 mins
175	Go-Ahead	UCD / Citywest	18	1 hour

[9] Average number of services per day in each direction, Monday-Friday

7.6.4 Bus capacity

Bus capacity depends upon bus model, which in turn varies according to the bus route, the time of day, and other operational factors.

The most common bus model currently used by Dublin Bus is the Volvo B5TL double-decker (comprising approx. 50% of its fleet), with a capacity of 95no. passengers. The majority of other buses in the Dublin Bus fleet have capacities ranging between 78no. passengers and 91no. passengers.

Go-Ahead Ireland operates a bus fleet comprising principally Volvo B5TL double-deckers (approx. 65% of its fleet) and Wright StreetLite single-deckers (approx. 30% of its fleet); these have capacities of 95no. passengers and 45no. passengers, respectively.

For the purposes of estimating bus service capacity, it is therefore assumed that:

- each bus on a Dublin Bus route has a capacity of 90no. passengers; and
- each bus on a Go-Ahead route has a capacity of 80no. passengers.

Table 32 and Table 33 present the resultant estimated bus service capacities during the AM peak hour (08:00-09:00) and the PM peak hour (17:00-18:00), respectively. These have been calculated on the basis of the timetabled number of buses serving stops within a 5-minute walk of the subject site, in each of these peak hours.

Table 32 – Local Bus Service Capacities – AM Peak (08:00-09:00)

Route No.	**Operator**	**Destination**	**Peak Hour Services** (buses)	**Approx. Peak Hour Capacity** (passengers)
27	Dublin Bus	Clare Hall	7	630
		Jobstown	7	630

54a	Dublin Bus	Pearse Street	2	180
		Ellensborough	3	270
65	Dublin Bus	Poolbeg Street	1	90
		Blessington	1	90
75 / 75a	Go-Ahead	Dún Laoghaire	1	80
		Tallaght	3	240
76 / 76a	Go-Ahead	Chapelizod	3	240
		Tallaght	2	160
77a	Dublin Bus	Ringsend Road	6	540
		Citywest	1	90
175	Go-Ahead	UCD	2	160
		Citywest	1	80

Table 33 – Local Bus Service Capacities – PM Peak (17:00-18:00)

Route No.	**Operator**	**Destination**	**Peak Hour Services** (buses)	**Approx. Peak Hour Capacity** (passengers)
27	Dublin Bus	Clare Hall	7	630
		Jobstown	7	630
54a	Dublin Bus	Pearse Street	2	180
		Ellensborough	3	270
65	Dublin Bus	Poolbeg Street	0	0
		Blessington	1	90
75 / 75a	Go-Ahead	Dún Laoghaire	2	160
		Tallaght	2	160
76 / 76a	Go-Ahead	Chapelizod	4	320
		Tallaght	2	160
77a	Dublin Bus	Ringsend Road	4	360
		Citywest	3	270
175	Go-Ahead	UCD	2	160
		Citywest	2	160

7.7 Contribution to Public Transport Service Demand

The subject development comprises 310no. residential apartments (excluding commercial space and crèche). TRICS data for similar residential developments (included in Appendix B) indicates that, on average, 2.22 person trips (by all modes of transport) are made to and from each such

residential unit on a typical weekday between the hours of 07:00 and 19:00. The development therefore has the potential to generate the following person trips during this time range:

- 688no. departures
- 688no. arrivals

The typical time distribution of these trips, also as dictated by the TRICS data, is given in Table 34.

Table 34 – TRICS Person Trip Time Distribution Proportions

Hour of the Day	Proportion of Departure Trips	Proportion of Arrival Trips
07:00-08:00	15.6%	4.2%
08:00-09:00	16.5%	3.2%
09:00-10:00	6.3%	4.8%
10:00-11:00	5.3%	5.3%
11:00-12:00	5.2%	5.1%
12:00-13:00	10.2%	8.5%
13:00-14:00	5.8%	7.6%
14:00-15:00	5.5%	6.0%
15:00-16:00	4.6%	7.6%
16:00-17:00	6.5%	12.9%
17:00-18:00	9.7%	20.9%
18:00-19:00	8.8%	13.9%

Table 35 applies these time distribution proportions to the development's projected total person trip generation between 07:00 and 19:00.

Table 35 – Person Trip Time Distribution for Proposed Development

Hour of the Day	Departure Trips	Arrival Trips
07:00-08:00	107	29
08:00-09:00	114	22
09:00-10:00	43	33
10:00-11:00	36	36

11:00-12:00	36	35
12:00-13:00	70	58
13:00-14:00	40	52
14:00-15:00	38	41
15:00-16:00	32	52
16:00-17:00	45	89
17:00-18:00	67	144
18:00-19:00	61	96

During the relevant peak hours for public transport demand, the proposed development is projected to generate:

- 114no. departure trips and 22no. arrival trips in the AM peak (08:00-09:00)
- 67no. departure trips and 144no. arrival trips in the PM peak (17:00-18:00)

The initial modal split targets for the proposed development, discussed more fully in the accompanying Mobility Management Plan, are as follows:

Table 36 – Initial Target Modal Splits for Development Occupants

Mode	Assumed Starting Proportion of Trips	Initial RTP Modal Split Targets
Driving a Car	23%	20%
Passenger in a Car	10%	7%
Bicycle	8%	10%
Motorcycle	0%	0%
Bus	15%	16%
Train or Tram	19%	22%
Walking	23%	25%
TOTAL	100%	100%

Applying these initial modal split targets, the development may therefore be expected to generate the following maximum possible public transport demand during each weekday peak hour:

Table 37 – Proposed Development Peak Hour Public Transport Demand

Public Transport Mode	Departure Trips	Arrival Trips
AM Peak Hour (08:00-09:00)		
Luas Tram	22	4
Bus	17	3
PM Peak Hour (17:00-18:00)		
Luas Tram	13	27
Bus	10	22

In the context of the proposed development's potential impact upon existing public transport services, only the following are considered relevant:

- Departure trips in the AM peak hour – assumed all to be made in the 'inbound' direction, towards Dublin city centre
- Arrival trips in the PM peak hour – assumed all to be made in the 'outbound' direction, away from Dublin city centre

Table 38 and Table 39 compare these public transport demand figures against the approximate existing tram and bus service capacities in the immediate vicinity of the subject development (see sub-sections 7.6.2 and 7.6.4), for both the AM peak hour and the PM peak hour.

Table 38 – Maximum Public Transport Demand – AM Peak Inbound

Public Transport Type	**Approx. Total Inbound Service Capacity** (passengers)	**Inbound Development Demand** (passengers)	**Demand as Proportion of Capacity**
Luas Tram	2,685	22	1.1%
Bus [10]	1,680	17	1.5%
Total	**4,365**	**39**	**1.3%**

Table 39 – Maximum Public Transport Demand – PM Peak Outbound

Public Transport Type	**Approx. Total Outbound Service Capacity** (passengers)	**Outbound Development Demand** (passengers)	**Demand as Proportion of Capacity**
Luas Tram	2,387	27	0.8%

[10] Considering only radial bus services into Dublin city centre

Bus [11]	1,420	22	1.0%
Total	**3,807**	**49**	**0.9%**

The above are to be considered 'worst-case scenario' figures, as they assume that:

- all public transport users departing the development in the AM peak will travel into Dublin city centre;
- all public transport users arriving to the development in the PM peak will travel from Dublin city centre; and
- development residents will use only radial bus routes into and out from Dublin city centre, and will not use orbital bus routes (e.g. route no. 75/75a between Dún Laoghaire and Tallaght).

Furthermore, as discussed previously, the true capacities of Luas Red Line tram services at times of peak demand are greater than those given here. The Luas capacity figures in Table 38 and Table 39 are conservative and are based on average tram frequencies over a 3-hour period, whereas Luas frequencies increase during the peak demand hours of 08:00-09:00 and 17:00-18:00 (but these increased frequencies are variable and therefore cannot be used to calculate capacity figures). It should be noted that the Tallaght Luas stop is a terminus of the Luas Red Line, as such it can be expected that the overall capacity outlined above shall equal the available capacity for outgoing trips from the subject development.

It is therefore concluded that the existing public transport service capacity is sufficient to meet the demands of the proposed development, and that the proposed development is not expected to contribute significant additional service demand. It is further noted that, in the event that additional public transport capacity is required on services in proximity to the subject

[11] Considering only radial bus services out from Dublin city centre

development site, this can be provided by means of increased frequency on the existing services. Such a decision would be made on the basis of observed demand, of which regular monitoring is undertaken by the National Transport Authority.

8.0 COMMENTS RECEIVED FROM PLANNING AUTHORITIES

Both An Bord Pleanála and South Dublin City Council have reviewed the planning documentation submitted in respect of the proposed development during the pre-application consultation phase of the SHD process. A tripartite pre-application consultation meeting has also been held with An Bord Pleanála and South Dublin City Council.

The relevant opinions of An Bord Pleanála that pertain to traffic and transport matters, as communicated to the applicant, are reproduced below; also examined in this section are the recommendations of South Dublin City Council's Transportation Planning Division, which were issued to An Bord Pleanála. In each case, we describe measures taken by the design team in response to these opinions and recommendations.

8.1 Opinions Issued by An Bord Pleanála

An Bord Pleanála has issued an opinion enumerating the items of specific information that should be submitted with any application for permission. The following items among these are of relevance to this Traffic and Transport Assessment

8.1.1 ABP Opinion Item 3

"*Further clarification and elaboration for the documents as they relate to the design and function of the proposed Tertiary Road linking Belgard Road with Belgard Square East. The intent with regard to the taking-in-charge of this road should be clearly stated*".

Response to ABP Opinion Item 3

It is not anticipated that the tertiary route shall be taken in charge by the Local Authority. The proposed tertiary route shall provide a pedestrian/cyclist link between Belgard Road and Belgard Square East

but restrict access for general vehicular traffic. The provision of 'filtered permeability' in this location is in line with Section 2.2.2 of the *Tallaght Town Centre Local Area Plan 2020* which states *"The Council will encourage pedestrian and cyclist priority, i.e. 'filtered permeability', to be demonstrated in development proposals, particularly those incorporating proposed cycle routes, strategic amenity routes and tertiary routes. This may be in the form of 'home zones' which are designed primarily for people, restricting through routes for vehicular traffic or other appropriate solutions."* The proposed tertiary route is shown to be a tertiary route/local route/homezone within Figure 2.1 of the Local Area Plan and as such is a suitable location for the consideration of filtered permeability. Additional commentary in relation to the planning considerations regarding the tertiary route is contained within the Planning Report by John Spain Associates.

Furthermore, the subject development site is situated in proximity to Belgard Road, an arterial route within the South Dublin area which carries high volumes of vehicular traffic. The provision of through access to Belgard Road would likely introduce a rat-run through the subject development and therefore result in detrimental effects for the pedestrians and active mode users within the development. Following discussions with representatives of South Dublin County Council's Roads Department it was stated that the Roads Department had no objection to the provision of filtered permeability for pedestrians and cyclists to Belgard Road and safety benefits were discussed.

The proposed tertiary route has been designed as a shared surface carriageway, flanked on either side by footpaths with a minimum width of 2.0m. Flush kerbs, paving materials and tactile strips shall be utilised to promote pedestrian priority and permeability throughout the subject development. It is proposed to provide a loading bay/set down area along the tertiary route to facilitate refuse collection, deliveries and

servicing, and taxi set-down within the site. Access to the creche set-down area is proposed via the tertiary route. Additionally, a disabled accessible car parking space is proposed along the tertiary route which shall be available for use by development occupants and visitors.

It is proposed that access from the proposed tertiary route to Belgard Road shall be restricted to pedestrians, cyclists, and emergency vehicles. **No through access** shall be facilitated for general vehicular traffic, thereby providing priority to pedestrians and cyclists through the provision of filtered permeability.

8.1.2 ABP Specific Information Item 9

"Drawings clearly identifying all works proposed in the public realm including any modifications to the adjoining road and public footpath networks. The relationship with future works and improvements as part of BusConnects, including modifications and upgrades to junctions, bus stops and footpaths should be clearly described".

Response to Item 9

Please refer to CS Consulting Drawing **Q003-CSC-ZZ-XX-DR-C-0020** for all the works proposed in the public realm including the modifications to the adjoining road and footpath networks, including those proposed under the BusConnects Core Bus Corridor. The proposed development shall not impact on the BusConnects infrastructure works. Changes to local traffic movements as a result of the implementation of BusConnects proposals have been considered in a sensitivity assessment within section 5.0 of this document.

8.1.3 ABP Specific Information Item 10

"The application should be accompanied by the following":

ABP Specific Information Item 11

"A statement addressing the matters raised in the report of the South Dublin County Council Roads Department, dated 26/11/2021".

Response to Item 11

Please refer to sub-section 8.2 for the responses to matters raised within the South Dublin County Council Roads Department Opinion.

8.1.4 ABP Specific Information Item 12

"A Parking Management Strategy, including detail on the breakdown of parking provision by type and land use".

Response to Item 12

Please refer to Car Parking Management Strategy under separate cover submitted with this application for details on the breakdown of parking provision by type and land use.

8.1.5 ABP Specific Information Item 13

"A Quality Audit demonstrating compliance with the principles and specifications set out in DMURS and the National Cycle Manual. This should include a Road Safety Audit which considers inter alia the design and layout of the proposed car park and the tertiary access route running between Belgard Square East and Belgard Road".

Response to Item 13

Please refer to Quality Audit Response Document under separate cover submitted with this application which demonstrates compliance with the principles and specifications set out in DMURS and the National Cycle Manual. The document also includes Road Safety Audit which considers

inter alia the design and layout of the proposed car park and the tertiary access route.

8.1.6 ABP Specific Information Item 14

"A Servicing and Operations Management Plan for the proposed commercial and residential uses".

Response to Item 14

A Servicing and Operations Management Plan document for the proposed commercial and residential uses is submitted with this application under a separate cover.

8.1.7 ABP Specific Information Item 15

"Details of the quantum and design of bicycle parking / storage, having regard to the provisions of the guidelines on Sustainable Urban Housing: Design Standards for New Apartments. The allocation of spaces between residential and commercial uses on the site should be clearly described. The design of such parking / storage should consider relevant access and operational requirements".

Response to Item 15

As described in sub-section 6.3, it is proposed that 743no. bicycle parking spaces shall be provided within the subject development of which 529no. are intended to serve the development residents' long-term provision. 20no. staff bicycle spaces are provided at basement level. 214no. spaces are intended to serve visitors to the proposed development. Visitor spaces shall be provided at surface level for the use of residential visitors and staff/patrons of the commercial uses proposed within the subject development. 159no. spaces at surface level are proposed to serve the residential visitors to the proposed development. The remaining 55no.

surface level spaces are intended to serve the visitors of the café, restaurant, retail, and office uses.

8.2 Recommendations by South Dublin County Council

The South Dublin City Council on the 26th of November 2021 issued an internal report making the following recommendations in relation to the proposed development.

8.2.1 SDCC Recommendations – Roads Department

Recommendation 1

"The proposed network will not adversely affect the capacity of surrounding roads network".

Response to Recommendation 1

The comment above from SDCC Roads and Traffic Department is noted. Operational assessment of surrounding junctions is described in Section 5.0 of this document. It can be concluded form the operational assessments carried out that the proposed development shall not adversely affect the capacity of the surrounding road network. The proposed development shall result in a maximum queue increase of 0.7 PCUs at the existing Blessington Road / Belgard Square East signalised junction in both the AM and PM peaks and a maximum queue increase of 0.1 PCUs at the Belgard Square East / The Square Car Park junction in the PM peak. It is not anticipated that the proposed development shall significantly impact any other surrounding junctions.

Recommendation 2

"The proposed creche car parking and set down area is not an efficient layout. (cul-de-sac) with the required inefficient turning movements. These movements should be moved out to the tertiary through road".

Response to Recommendation 2

It is proposed that access from the proposed tertiary route to Belgard Road shall be restricted to pedestrians, cyclists, and emergency vehicles. **No through access** shall be facilitated for general vehicular traffic. It is proposed to install demountable bollards at this location which shall be controlled by the management company to ensure access is restricted. As such, it is not considered that moving the car parking area to the tertiary route would result in a more efficient layout. To facilitate more efficient turning movements, the following design changes have been undertaken.

- 1no. parking space has been removed from the creche parking area to provide more space for parking manoeuvres.
- Spaces have been arranged along the western edge to allow for easier parking manoeuvres.
- Dedicated pedestrian zones have been implemented to ensure pedestrian safety.
- Footpath is continued across the junction of the car park area to reinforce priority for pedestrians at this location.

Recommendation 3

"The Tertiary road needs to designed such that more set down spaces are provided for the creche. This would provide more efficient car movements".

Response to Recommendation 3

The request to provide additional set down spaces for the creche on the Tertiary route is noted. It should be noted that the 4no. creche car parking spaces proposed is in line with the maximum standards outlined in the *South Dublin County Development Plan 2016-2022,* please refer to Table 22. As noted in response to recommendation 2 above it is proposed that the creche parking arrangement shall be segregated from tertiary route turning movements in order to ensure the most efficient car movements are provided. However, an accessible parking space has been provided on the tertiary route for use by development visitors.

Recommendation 4

"*The proposed development is well connected to Public transport links and is close to several key amenities. There is scope to reduce the car parking provision. SDCC recommend that circa 130 no. spaces are provided within the development. The creche spaces at ground floor level can be removed*".

Response to Recommendation 4

The recommendation above has been noted, car parking provision for the subject development has been reduced to 135no. spaces, including 130no. spaces at basement level for use by development residents. The quantum of creche car parking within the proposed development has been reduced and long-term creche carparking has been removed from ground floor level. As mentioned in response to recommendations 2 and 3 above, the creche set-down area has been rearranged to provide a more efficient turning layout and to increase the safety of creche users and pedestrians in this area.

Recommendation 5

"The basement car parking layout is satisfactory. A total of 10% of the car parking spaces are required to be fully operational electric charging spaces on the first opening of the development. 100% of the spaces must be ducted for future electric charging provision.

A total of 5% of the car parking spaces shall be mobility impaired spaces".

Response to Recommendation 5

As detailed in sub-sections 6.2 and 0, a total of 27no. car parking spaces shall be EV charging spaces within the proposed development's basement, and all other car parking spaces within the development shall be ducted for future electric charging provision.

The proposed development shall have 8no. mobility impaired spaces within the development's basement which exceeds the required 5% of the total car provision.

Recommendation 6

"Further detailed design of all proposed vehicular accesses is required at stage 3".

Response to Recommendation 6

The subject development contains 2no. primary access points on Belgard Square East which shall provide access to the development's tertiary route and to the development's basement car park. Following further consultations with representatives of South Dublin County Council's Roads Department it was noted that occasional queuing occurs in the southbound direction on Belgard Square East due to the neighbouring commercial development which operates a drive-through. In order to ensure access/egress to the site is available at all times it is proposed to

implement yellow box road markings on Belgard Square East at the locations of the subject development access points.

A dedicated pedestrian/cyclists access is present at the eastern boundary of the subject development site on to Belgard Road. This access is reserved for use emergency vehicles, and pedestrians and cyclists. This shall therefore improve pedestrian and cyclist safety in this location.

Please refer to CS Consulting drawings nos. **Q003-CSC-ZZ-XX-DR-C-0006, Q003-CSC-ZZ-XX-DR-C-0007** and **Q003-CSC-ZZ-XX-DR-C-0008** for details of development access proposals.

Recommendation 7

"The proposed development shall tie in seamlessly with the existing footpaths and public realm. More detail is required at stage 3 and the agreement of the roads department must be attained for this important area".

Response to Recommendation 7

Following further discussions with representatives of South Dublin County Council's Roads Department the public realm has been designed in compliance with the principles set out in the SDCC Taking in Charge document. 2.0m clear footpath widths shall be provided within the subject development. The development's public realm design shall tie in seamlessly with the existing footpath infrastructure.

Recommendation 8

"An Autotrack swept path analysis is required to ensure Fire tender and Bin collection access to all required locations".

Response to Recommendation 8

Please refer to CS Consulting Drawing no. **Q003-CSC-ZZ-XX-DR-C-0009** for the swept path analysis of fire tender access to all the required locations. The Bin collection shall be provided at the northern edge of the proposed internal tertiary route.

Recommendation 9

"A Taking in Charge layout needs to be agreed with SDCC. The items for taking in Charge must be in accordance with Appendix 6 of the Taking in Charge Standards".

Response to Recommendation 9

Taking in Charge Standards were discussed with representatives of South Dublin County Council's Roads Department in meetings following receipt of the pre-planning opinion. Areas for taking in charge shall be designed in accordance with Appendix 6 of the Taking in Charge Standards. The Taking in Charge Layout as proposed is shown in HJL drawing no. **BR-HJL-00-DR-A-006**. The area to be taken in charge excludes areas beneath balconies.

Recommendation 10

"The applicant should liaise with the Active Travel Team to ensure appropriate cycle connections are made to existing and planned cycle routes adjoining the proposed development".

Response to Recommendation 10

A meeting was held with representatives of South Dublin County Council's Active Travel Team on Friday 11th of March to discuss the proposed development. Design changes were made in response to this meeting and all measures discussed for implementation have been included within the revised design including the following;

- Alteration of the design of the shared street arrangement.
- Alteration of cycle access junction on Belgard Road.
- Design and location of visitor and long-stay cycle spaces and access arrangements.

Recommendation 11

"The applicant must ensure that the proposed development aligns with any NTA Bus connects project".

Response to Recommendation 11

As outlined in section 3.2, it is proposed to implement Core Bus Corridor no. 9 (Greenhills to City Centre) along Belgard Square North, Belgard Square East, and Blessington Road, passing along the western boundary of the subject development site. Please refer to CS Consulting drawing no. Q003-CSC-ZZ-XX-DR-C-0020 for details of how the project aligns with the preferred route option of BusConnects Core Bus Corridor no. 9.

Recommendation 12

"The applicant shall submit stage 1 Road safety audit for the proposed development".

Response to Recommendation 12

A Stage 1 Quality Audit was undertaken by PMCE in relation to the proposed development layout. All recommendations of the audit team have been accepted/agreed with the design team and design changes were made as a result of this audit. Please refer to Stage 1 Quality Audit document submitted under a separate cover within this planning application. Please also refer to CS Consulting drawing no. **Q003-CSC-ZZ-XX-DR-C-0022.**

Recommendation 13

"A Mobility Management Plan is to be completed within six months of opening of the proposed development. The Mobility Management Plan shall be agreed in writing with the roads department and the agreed plan, along with the written agreement of the roads department shall be lodged to the planning file. The written commitment of the developer to implement the agreed plan shall also be lodged to the file. REASON: In the interest of sustainable transport".

Response to Recommendation 13

A Mobility Management Plan framework has been prepared and is submitted under separate cover with this planning application.

Recommendation 14

"The management of bin collection and servicing needs to be set out clearly".

Response to Recommendation 14

It is proposed that a waste collection point will be provided at the southern edge of the proposed internal tertiary route, allowing for refuse collection to occur internally within the subject development site.

2no. loading bays are proposed within the subject development to facilitate servicing of the proposed commercial/retail units and residential units; 1no. on Belgard Square East and 1no. on the proposed tertiary route.

Please refer to the Service and Operations Management Plan under separate cover for further details of proposed servicing and waste collection arrangements.

Recommendation 15

"Prior to commencement, SDCC will require a public lighting scheme to be agreed with South Dublin County Council Lighting Department".

Response to Recommendation 15

A public lighting scheme has been prepared by Axiseng Engineering and has been included under separate cover within the subject application.

Recommendation 16

"Prior to commencement a developed Construction Demolition and Waste Management Plan shall be agreed by SDCC and lodged on the planning file".

Response to Recommendation 16

Please refer to Construction Demolition Waste Management Plan under a separate cover submitted with this planning details for further details.

9.0 SUMMARY & CONCLUSIONS

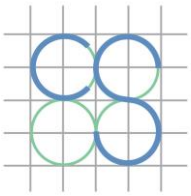
This report examines the impact of a proposed mixed-use development on Belgard Square East, Belgard Road and Blessington Road, Dublin 24 on the performance of the surrounding road network, and assesses the development's internal layout; car, bicycle, and motorcycle parking provision; cyclist and pedestrian facilities; and servicing arrangements.

The main observations and conclusions of this study are as follows:

- The proposed development shall not generate excessive vehicular traffic flows in its operational phase. Total vehicle trips (arrivals and departures combined) of 74 PCU are predicted during the AM peak hour, and total vehicle trips of 98 PCU in the PM peak hour.
- 4no. junctions in the vicinity of the site have been modelled (including 2no. development access junctions). All junction approaches are shown to continue operating within their effective capacities past the year 2040, with vehicle queues and delays on all junction approaches at levels generally similar to those currently existing.
- The proposed provision of car, motorcycle, and bicycle parking within the development (including disabled-accessible car parking spaces) complies with Local Authority development plan standards.
- Clear forward distance sightlines and visibility splays in excess of 49m are achieved at all new junctions proposed as part of the development, in accordance with the requirements of the *Design Manual for Urban Roads and Streets*.
- Swept path analyses have been conducted for cars manoeuvring within the proposed development, as well as for a refuse vehicle and a fire tender. These indicate that the design of the development access and its internal layout can accommodate these vehicle movements where required.

In summary, the assessment indicates that the proposed development can be supported by the existing road infrastructure, that the parking provision for the proposed development conforms to Local Authority standards, and that the development access design and internal layout are fit for purpose and comply with the *Design Manual for Urban Roads and Streets*.

Appendix A: Traffic Survey Data

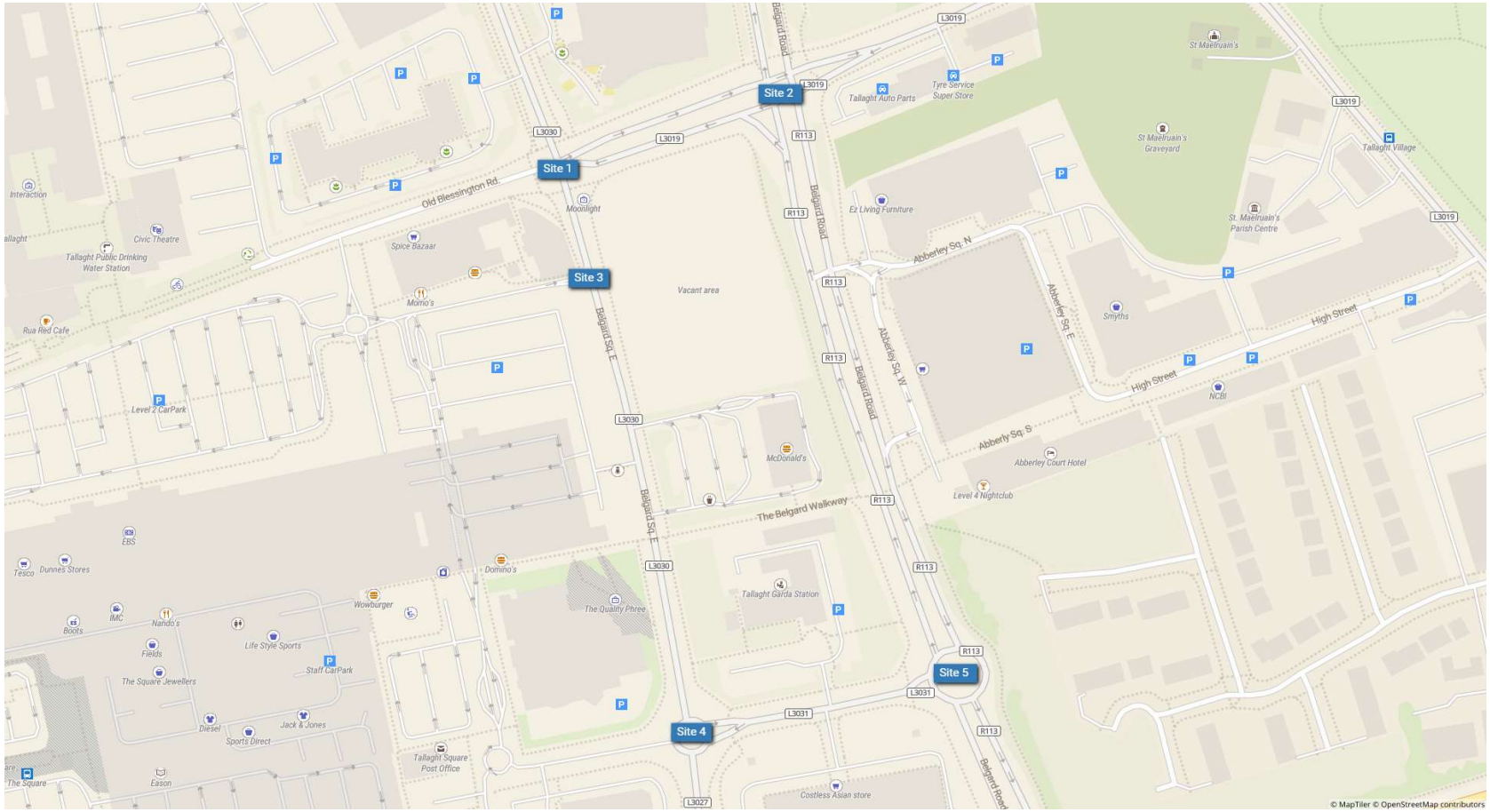


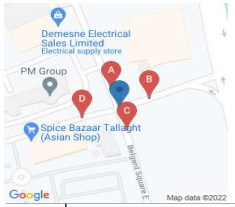
CS CONSULTING

GROUP

IDASO

Survey Name: 039 22056 Belgard Road Traffic Quotations
Date: Tue 15 Feb 2022





IDASO

Survey Name: 039 22056 Belgard Road Traffic Quotations
Site: Site 1
Location: Belgard Square E/Unnamed Road
Date: Tue 15-Feb-2022

	A => A									A => B									A => C									A => D									
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
07:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.2	0	0	3	1	0	0	0	0	4	4	1	0	0	0	1	0	0	0	2	1.2	1	0	2
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	2	1	0	0	1	9	9.2	0	0	0	0	1	0	0	0	1	1	0	0	1
07:30	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	3	1.4	0	0	9	0	2	1	0	0	12	12.5	0	0	1	0	1	1	0	0	3	3.5	1	0	2
07:45	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1.2	0	0	14	0	4	0	0	0	18	18	0	0	0	0	0	0	0	0	0	0	1	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	4	0	1	1	0	0	0	0	6	2.8	1	0	30	3	7	1	0	1	43	43.7	1	0	1	0	3	1	0	0	6	5.7	3	0	7
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H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	3	0	1	0	0	0	5	4.2	1	0	54	4	6	0	2	0	67	68.8	0	0	5	0	1	0	1	0	7	8.3	8	0	21
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	10	0	1	0	0	1	12	13	1	0	66	2	11	0	0	2	82	83.2	1	0	20	1	1	0	0	0	23	22.2	0	0	25
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H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	7	0	1	0	0	0	9	8.2	0	0	88	1	8	0	0	1	98	99	0	0	23	0	2	0	0	0	25	25	1	0	18
16:00	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	5	5	0	0	19	1	3	0	0	0	23	23	0	0	3	0	0	0	0	0	3	3	0	0	3
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	2	3	0	0	0	31	31	1	0	6	0	0	0	0	0	7	6.2	0	0	5
16:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	18	1	3	0	0	0	22	22	0	0	8	0	1	0	0	0	9	9	0	0	7
16:45	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	3	3.2	0	0	22	1	2	0	0	0	25	25	0	0	2	0	0	0	0	0	2	2	0	0	5
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	4	3	0	0	0	1	9	9.2	0	0	85	5	11	0	0	0	101	101	1	0	19	0	1	0	0	0	21	20.2	0	0	20
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	1	0	0	0	34	34	0	0	2	0	3	1	0	0	6	6.5	1	0	2
17:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	4	2.4	0	0	20	0	1	0	0	0	21	21	0	0	8	0	0	0	0	0	8	8	0	0	4
17:30	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	0	10	10	0	0	32	1	2	0	0	0	35	35	0	0	10	0	3	0	0	0	13	13	0	0	4
17:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	0	0	18	1	1	0	0	0	20	20	0	0	11	0	0	0	0	0	11	11	0	0	8
H/TOT	0	0	0	0	0	0	0	0	0	0	2	0	11	1	2	0	0	0	16	14.4	0	0	103	2	5	0	0	0	110	110	0	0	31	0	6	1	0	0	38	38.5	1	0	18
18:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	1	0	0	5	5.5	0	0	20	0	0	0	0	0	20	20	0	0	6	1	1	0	0	0	8	8	0	0	1
18:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1.2	0	0	17	0	1	0	0	0	18	18	0	0	7	0	1	0	0	0	8	8	0	0	9
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	17	0	0	0	0	0	17	17	0	0	3	0	1	0	0	0	4	4	0	0	7
18:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2	0	0	12	1	2	0	0	0	15	15	0	0	4	0	0	0	0	0	4	4	0	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	5	1	2	1	0	0	10	9.7	0	0	66	1	3	0	0	0	70	70	0	0	20	1	3	0	0	0	24	24	0	0	19
12 TOT	0	0	0	0	0	0	0	0	0	0	13	0	73	8	13	3	0	6	116	113.1	3	0	956	30	96	12	4	8	1109	1125.8	4	0	261	7	25	4	1	0	302	302.1	17	0	228

B => A							B => B										B => C										B => D										C => A							
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV
0	0	1	0	0	4	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	0	0	2	1.2	0	0	22	0	1	1	0	1
0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	34	0	3	0	0	0
0	0	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2	1	0	0	0	0	0	0	0	1	0.2	1	0	43	1	6	1	0	1
0	0	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	2	2	0	0	68	0	6	0	0	2
0	0	1	0	0	11	9.1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	0	0	7	7	2	0	2	0	1	0	0	0	5	3.4	1	0	167	1	16	2	0	4
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0	2	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10	10	0	0	7	0	1	0	0	0	8	8	0	0	63	3	5	2	0	1
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1	6	0	0	0	27	27	0	0	0	0	0	0	0	0	0	0	0	0	47	1	1	0	1	0	50	51.3	4	0	38	1	2	0	0	0	45	41.8	0	0	266	15	19	5	0	7
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2	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10	10	2	0	3	1	0	0	0	0	6	4.4	1	0	65	3	4	0	0	0
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0	0	0	0	0	7	6.2	0	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	0	12	12	0	0	8	0	0	0	0	0	8	8	0	0	65	3	8	2	0	3
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0	0	0	1	0	11	12.3	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	0	10	10	2	0	4	0	0	0	0	0	6	4.4	0	0	64	1	5	0	0	3
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0	2	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	59	6	5	0	0	2
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20	20	4	2	1	292	284	0	0	0	0	0	0	0	0	0	0	0	0	341	17	25	3	1	0	387	389.8	29	2	268	14	13	0	0	0	326	301.6	6	2	2613	112	248	36	3	58

		C => B										C => C										C => D										D => A												
TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
25	26.5	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	1	0	0
37	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0
53	53.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	6	6	0	0	0	0	0	1	0	0	1	1.5	4	0	2
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70	70.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3	3	0	0	5	0	1	1	0	0	7	7.5	1	0	4
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87	87.7	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	6	0	0	6	0	1	0	0	0	7	7	1	0	8
84	84.2	0	0	2	0	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	6	2	0	4	0	0	0	0	0	6	4.4	0	0	5
307	309.1	0	0	3	0	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	0	20	20	2	0	17	0	2	1	1	0	23	23.2	6	0	19
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229	235	0	1	0	0	0	1	0	1	3	3.9	0	0	0	0	0	0	0	0	0	0	0	0	15	0	2	0	0	0	17	17	0	0	19	1	3	0	0	0	23	23	3	1	18
46	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	12	0	0	0	0	0	12	12	0	0	6
49	51.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	8	1	0	0	0	0	9	9	0	0	15
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67	68.5	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	15	0	2	0	0	0	17	17	0	0	9
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93	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	0	5	6	1	0	13	0	1	0	0	0	15	14.2	1	0	10
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71	73.5	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	3.5	1	0	19	0	2	1	0	0	23	22.7	0	0	14
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73	72.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	0	0	20	1	3	0	0	0	24	24	1	0	14
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81	85	0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6	0	3	0	0	0	9	9	0	0	23	0	1	0	1	0	25	26.3	0	0	15
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45	45.4	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	0	0	26	2	1	0	0	0	29	29	2	0	18
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72	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	12	0	0	0	0	0	12	12	0	0	17
220	222.6	0	0	4	1	0	1	0	0	6	6.5	0	0	1	0	0	0	0	0	1	1	0	0	13	1	0	0	0	0	14	14	0	0	61	2	2	0	0	0	65	65	6	0	73
68	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	5	0	0	20	0	0	0	0	0	20	20	1	0	11
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34	36.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	8	1	0	11
193	197.3	0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	12	0	1	0	0	0	13	13	0	0	54	1	3	0	0	0	58	58	3	0	44
3078	3151.9	1	1	33	1	5	2	0	1	44	44.6	0	0	1	0	0	0	0	0	1	1	2	1	138	3	14	3	1	1	163	164.6	4	0	579	14	42	6	4	1	650	656	48	3	549

D => B							D => C										D => D									
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	1	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
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0	3	0	0	0	18	17.2	0	0	6	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
0	4	0	0	0	74	69.4	0	0	16	0	2	0	0	0	18	18	0	0	0	0	0	0	0	0	0	0
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0	2	0	0	0	23	23	0	0	6	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
1	1	0	0	0	14	14	0	0	11	0	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0
0	3	0	0	0	24	21.8	0	0	8	0	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0
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0	2	0	0	0	22	20.4	0	0	15	0	0	0	0	0	15	15	0	0	0	0	0	0	0	0	0	0
0	3	0	0	0	19	17.4	0	0	17	0	0	0	0	0	17	17	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	17	17	0	0	5	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	12	11.2	0	0	6	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	12	11.2	0	0	3	0	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
0	2	0	0	0	49	46.6	0	0	21	0	2	0	0	0	23	23	0	0	0	0	0	0	0	0	0	0
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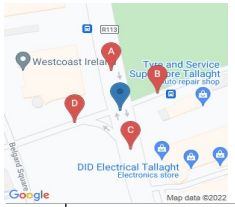

IDASO

Survey Name: 039 22056 Belgard Road Traffic Quotations
Site: Site 2
Location: Belgard Road/Blessington Road/R113/Unnamed Road
Date: Tue 15-Feb-2022

	A => A									A => B									A => C									A => D									
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
07:00	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	3	6	0	0	13	1	7	3	1	0	25	27.8	0	0	2	0	0	0	0	0	2	2	1	0	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	1	0	17	0	9	2	0	0	29	29.2	0	0	1	0	1	0	0	0	2	2	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	24	0	9	4	0	1	38	41	0	0	2	0	1	0	0	0	3	3	1	0	1
07:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	5	8.2	0	0	32	4	9	4	0	0	49	51	0	0	1	0	0	0	0	0	1	1	1	0	0
H/TOT	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	12	13	24.2	1	0	86	5	34	13	1	1	141	149	0	0	6	0	2	0	0	0	8	8	3	0	2
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	12	0	0	31	0	6	1	0	0	38	38.5	0	0	2	0	0	0	0	0	2	2	1	0	5
08:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	3	7	10	0	0	36	1	7	4	0	1	49	52	0	0	0	0	0	0	0	0	0	0	1	0	3
08:30	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	2	8	7.6	0	0	35	0	8	2	0	0	45	46	0	0	6	3	0	0	0	0	9	9	0	1	6
08:45	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	6	9	15	0	0	47	2	7	2	0	0	58	59	0	0	6	0	0	0	0	0	6	6	2	0	16
H/TOT	0	0	0	0	0	0	0	0	0	0	3	0	9	0	1	0	0	17	30	44.6	0	0	149	3	28	9	0	1	190	195.5	0	0	14	3	0	0	0	0	17	17	4	1	30
09:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	5	8	13	1	0	59	0	12	2	0	0	74	74.2	0	0	4	0	0	0	0	0	4	4	0	0	8
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	12	0	1	52	3	11	2	0	0	69	69.4	0	0	4	2	0	0	0	0	6	6	2	0	1
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09:45	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	4	7	11	0	0	60	4	13	1	1	0	79	80.8	0	0	18	2	1	0	0	0	21	21	0	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	11	0	1	1	0	18	31	49.5	2	1	221	12	44	5	1	0	286	287.6	0	0	35	4	2	0	0	0	41	41	2	0	16
10:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	4	6	10	0	0	48	1	15	3	0	0	67	68.5	0	0	5	1	0	0	0	0	6	6	0	0	5
10:15	0	0	0	0	0	0	0	0	0	0	0	0	6	0	2	0	0	2	10	12	0	0	62	1	9	2	1	0	75	77.3	0	0	6	1	2	0	0	0	9	9	0	0	3
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	11	0	5	1	0	13	30	43.5	0	0	207	8	48	8	1	0	272	277.3	0	0	32	2	2	0	0	0	36	36	0	1	23
11:00	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	2	4	6	0	0	65	1	7	2	0	0	75	76	0	0	8	1	1	0	0	0	10	10	0	0	10
11:15	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	3	10	13	0	0	49	1	5	2	0	0	57	58	0	0	9	0	1	0	0	0	10	10	2	0	3
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H/TOT	0	0	2	0	0	0	0	0	2	2	0	0	19	0	2	0	0	12	33	45	1	0	250	11	31	9	0	0	302	305.7	0	0	32	4	4	0	0	0	40	40	2	0	30
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	6	1	4	1	0	13	25	38.5	1	0	260	9	46	7	0	2	325	329.7	0	0	41	1	3	0	0	0	45	45	0	0	37
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13:15	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	2	6	8	1	0	73	1	8	4	0	0	87	88.2	0	0	17	2	0	0	0	0	19	19	0	0	8
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13:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	5	9	0	0	63	1	10	1	0	0	75	75.5	0	0	12	1	0	0	0	0	13	13	0	0	16
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	8	2	3	1	0	12	27	38.7	1	0	282	4	37	12	0	1	337	343.2	0	0	50	4	1	0	0	0	55	55	4	0	38
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14:45	0	0	0	0	0	0	0	0	0	0	2	0	3	0	3	0	0	4	12	14.4	2	0	74	2	12	0	0	0	90	88.4	0	0	11	3	0	0	0	0	14	14	0	0	31
H/TOT	0	0	1	0	0	0	0	0	1	1	3	0	13	3	8	0	0	12	39	48.6	6	0	283	10	34	4	0	0	337	334.2	0	0	34	5	2	0	1	0	42	43.3	0	0	64
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H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	7	0	1	0	0	13	22	34.2	1	5	287	10	51	4	2	2	362	364.8	1	0	38	4	5	0	0	0	48	47.2	0	0	60
16:00	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	2	5	5.4	3	2	82	8	15	0	0	0	110	106.4	0	0	7	0	0	0	0	0	7	7	0	0	24
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H/TOT	0	0	0	0	0	0	0	0	0	0	4	0	7	1	7	1	0	12	32	41.3	4	2	318	19	53	5	1	0	402	401.4	0	0	23	0	1	0	0	0	24	24	0	0	84
17:00	0	0	0	0	0	0	0	0	0	0	2	0	3	1	0	0	0	5	11	14.4	2	0	91	2	10	2	0	0	107	106.4	1	0	10	0	1	0	1	0	13	13.5	0	0	20
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H/TOT	0	0	1	0	0	0	0	0	1	1	4	1	9	2	0	0	0	17	33	46.2	4	2	346	10	39	3	0	0	404	401.1	2	0	29	3	2	0	1	0	37	36.7	1	1	54
18:00	0	0	1	0	0	0	0	0	1	1	0	0	3	0	0	1	0	4	8	12.5	0	0	53	2	9	0	1	0	65	66.3	0	0	3	0	0	0	0	0	3	3	0	0	8
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6	1	2	57	0	5	1	0	0	66	64.5	0	0	7	0	1	0	0	0	8	8	1	0	8
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H/TOT	0	0	1	0	0	0	0	0	1	1	1	0	4	0	0	1	0	12	18	29.7	2	4	220	5	28	2	2	1	264	264.6	1	0	22	1	1	0	0	0	25	24.2	2	0	27
12 TOT	0	0	6	0	0	0	0	0	6	6	18	1	104	9	32	6	0	163	333	484	23	14	2909	106	473	81	8	8	3622	3654.1	4	0	356	31	25	0	2	0	418	417.4	18	3	465

B => A							B => B										B => C										B => D										C => A								
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV
0	0	0	0	4	6	9.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0.4	1	0	48	0	10	1	0	2
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1	1	0	0	12	19	28.6	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	4	0	1	0	0	0	0	0	5	1.8	2	0	297	2	53	8	2	12
0	0	0	0	1	7	7.2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	1	0	0	1	0	0	0	0	2	1.2	1	0	85	1	8	1	1	5
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		C => B										C => C										C => D										D => A												
TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
62	63.7	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	4	4.5	0	0	1	0	1	0	0	0	2	2	1	0	0
101	106	0	0	2	0	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0
103	108.3	0	0	3	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1.2	0	0	0	1	0	0	0	0	1	1	2	0	0
110	115	0	0	2	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	4	4	2	0	1	0	0	0	0	0	3	1.4	3	0	0
376	393	0	0	7	0	2	0	0	5	14	19	0	0	0	0	0	0	0	0	0	0	1	0	6	0	3	1	0	0	11	10.7	2	0	2	1	1	0	0	0	6	4.4	7	0	0
102	108	0	0	5	0	0	1	0	0	6	6.5	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10	10	0	0	1	0	0	0	0	0	1	1	2	0	0
113	117	0	0	10	0	0	0	0	1	11	12	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	0	6	5.2	0	0	1	0	0	0	0	0	1	1	4	0	0
139	142.7	0	0	10	0	4	0	0	0	14	14	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	0	0	5	0	1	0	0	0	6	6	2	0	0
130	134.6	1	1	17	0	1	0	0	1	21	20.6	0	0	0	0	0	0	0	0	0	0	2	0	14	0	1	0	0	0	17	15.4	0	0	1	0	1	0	0	0	2	2	0	0	3
484	502.3	1	1	42	0	5	1	0	2	52	53.1	0	0	0	0	0	0	0	0	0	0	3	0	31	0	1	0	0	0	35	32.6	0	0	8	0	2	0	0	0	10	10	8	0	3
122	123.6	0	0	19	0	2	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0	0	0	8	2	1	0	0	0	11	11	0	0	1	1	1	0	0	1	4	5	0	0	0
105	111.9	0	0	14	0	0	1	0	0	15	15.5	0	0	0	0	0	0	0	0	0	0	0	0	9	0	1	0	0	0	10	10	0	0	1	0	0	0	0	0	1	1	1	1	0
91	95.3	0	0	13	0	1	1	0	0	15	15.5	0	0	0	0	0	0	0	0	0	0	0	0	9	1	2	0	0	1	13	14	1	1	0	0	1	0	0	0	3	1.6	1	0	0
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408	426.8	0	0	59	0	4	2	0	0	65	66	0	0	0	0	0	0	0	0	0	0	0	0	37	4	4	0	0	1	46	47	1	1	10	1	2	1	0	1	17	17.1	2	1	1
73	78.5	0	0	6	0	1	1	0	0	8	8.5	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	9	9	0	0	1	0	1	0	0	0	2	2	0	0	0
82	86.8	0	0	8	0	2	0	0	1	11	12	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	8	0	0	5	0	0	0	0	0	5	5	0	0	0
84	86.5	0	0	11	0	2	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0	2	0	8	0	0	0	0	0	10	8.4	0	0	6	0	0	0	0	0	6	6	0	0	1
98	102.8	0	0	8	0	0	0	0	1	9	10	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	0	0	9	9	0	0	7	0	0	1	0	1	9	10.5	1	0	2
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81	83.4	0	0	5	0	1	0	0	2	8	10	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7	0	0	5	0	0	1	0	0	6	6.5	0	0	2
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79	83.2	0	0	12	2	0	0	0	1	15	16	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	6	0	0	4	0	0	0	0	0	4	4	1	0	1
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91	96	0	0	9	0	0	0	0	1	10	11	0	0	0	0	0	0	0	0	0	0	0	0	9	0	3	0	0	0	12	12	0	0	6	0	0	0	0	0	6	6	0	0	0
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374	387.8	0	0	28	0	0	1	0	1	30	31.5	0	0	0	0	0	0	0	0	0	0	0	0	37	1	5	0	1	0	44	45.3	0	0	24	0	1	0	0	0	25	25	4	0	5
97	100.9	0	0	7	1	2	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	9	9	0	0	1	0	1	0	0	0	2	2	0	0	3
100	104.2	0	0	7	0	0	0	0	1	8	9	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7	0	0	9	1	0	0	0	0	10	10	0	0	2
83	89.3	0	0	14	0	0	0	0	1	15	16	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5	0	0	6	0	0	0	0	0	6	6	2	0	9
96	99.8	0	0	8	0	2	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7	0	0	6	0	1	0	0	0	7	7	0	0	5
376	394.2	0	0	36	1	4	0	0	2	43	45	0	0	0	0	0	0	0	0	0	0	0	0	27	1	0	0	0	0	28	28	0	0	22	1	2	0	0	0	25	25	2	0	19
99	102.7	0	0	9	0	1	0	0	1	11	12	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	0	0	11	10.2	0	0	3	0	1	0	0	1	5	6	0	0	3
98	102.8	0	0	11	0	0	0	0	1	12	13	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	2	0	0	11	12	0	0	7	0	0	0	0	0	7	7	2	0	2
93	96	0	0	11	0	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7	0	0	3	0	0	0	0	1	4	5	3	0	1
105	109.5	0	0	12	0	0	0	0	1	13	14	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	5	2	0	9	1	0	0	0	1	13	12.4	0	0	0
395	411	0	0	43	0	1	0	0	3	47	50	0	0	0	0	0	0	0	0	0	0	1	0	29	1	1	2	0	0	34	34.2	2	0	22	1	1	0	0	3	29	30.4	5	0	6
99	104	0	0	5	0	1	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	1	9	0	1	0	0	0	11	10.4	0	1	10	0	2	0	0	0	13	12.4	1	0	1
106	109.1	0	0	5	1	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	0	0	10	9.2	0	0	3	0	0	0	0	0	3	3	2	0	0
93	100.6	0	0	9	0	1	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	4	0	0	10	0	0	0	0	0	10	10	2	0	1
93	97	0	0	11	0	0	0	0	1	12	13	0	0	0	0	0	0	0	0	0	0	1	0	9	0	1	0	0	0	11	10.2	0	0	4	0	2	0	0	0	6	6	1	0	3
391	410.7	0	0	30	1	2	0	0	1	34	35	0	0	0	0	0	0	0	0	0	0	2	1	31	0	2	0	0	0	36	33.8	0	1	27	0	4	0	0	0	32	31.4	6	0	5
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106	108.5	1	0	11	0	0	0	0	1	13	13.2	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	8	0	0	9	0	0	0	0	0	9	9	1	0	0
107	111.2	0	0	4	0	2	0	0	1	7	8	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	0	10	10.5	0	0	5	0	1	0	0	0	6	6	0	0	1
80	85.3	0	0	6	0	2	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	5	5	0	0	10	0	1	0	0	1	12	13	3	0	0
369	385	1	0	24	1	5	0	0	3	34	36.2	0	0	0	0	0	0	0	0	0	0	0	0	35	3	0	1	0	0	39	39.5	2	0	36	2	2	0	0	1	43	42.4	5	0	2
102	104.9	0	0	3	0	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	4	3.2	0	0	5	0	1	0	0	0	6	6	3	0	0
98	101.4	0	0	7	0	2	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5	0	0	7	0	1	0	0	0	8	8	4	0	0
87	89.4	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	11	11	1	0	14	1	1	0	0	0	17	16.2	1	0	1
89	95.5	0	0	7	0	0	0	0	1	8	9	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	0	0	0	10	10	0	0	9	0	0	0	0	0	9	9	1	0	2
376	391.2	0	0	21	0	3	0	0	1	25	26	0	0	0	0	0	0	0	0	0	0	1	0	25	1	3	0	0	0	30	29.2	1	0	35	1	3	0	0	0	40	39.2	9	0	3
90	93.2	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	8	0	0	8	0	0	1	0	0	9	9.5	1	0	0
68	73.3	0	0	1	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	13	13	1	0	5	0	0	0	0	0	6	5.2	0	0	1
77	80.5	0	0	3	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	1	0	12	0	1	0	0	0	14	13.2	0	0	6	0	1	0	0	0	7	7	0	0	0
65	66.7	0	0	1	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	11	0	2	0	0	0	13	13	0	0	7	0	0	0	0	0	7	7	1	0	0
300	313.7	0	0	9	0	0	0	0	3	12	15	0	0	0	0	0	0	0	0	0	0	1	0	44	0	3	0	0	0	48	47.2	1	0	26	0	1	1	0	0	29	28.7	2	0	1
4535	4736.2	2	1	362	6	34	5	0	26	436	462.3	0	0	0	0	0	0	0	0	0	0	11	1	359	12	25	5	1	1	415	410.4	9	2	252	7	20	4	1	6	301	301.9	53	1	52

D => B							D => C										D => D									
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	3	0.6	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	7	1.4	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2	0.4	0	0	4	1	1	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	4	0.8	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2	0.4	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	2	0.6	0	0	5	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	2	0.4	0	0	11	0	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	1	0.2	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	4	2.4	0	0	21	1	3	0	0	0	25	25	0	0	0	0	0	0	0	0	0	0
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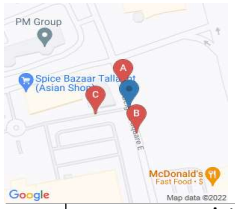

IDASO

Survey Name: 039 22056 Belgard Road Traffic Quotations
Site: Site 3
Location: Belgard Square E/Unnamed Road
Date: Tue 15-Feb-2022

	A => A									A => B									A => C									B => A								
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
07:00	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	1	0	23	1	1	1	0	1	28	28.7	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	1	0	6	1	2	0	0	1	11	11.2	0	0	2	0	0	0	0	0	2	2	0	0	32	0	3	0	0	0	35	35	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	7	1	2	1	0	0	11	11.5	0	0	3	0	0	0	0	0	3	3	1	0	43	2	6	1	0	1	54	54.7	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	9	1	3	0	0	0	13	13	0	0	4	0	2	0	0	0	6	6	0	0	72	0	5	0	0	2	79	81	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	27	3	7	1	0	1	40	40.7	0	0	9	0	2	0	0	0	11	11	2	0	170	3	15	2	0	4	196	199.4	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	1	0	7	1	2	0	0	0	11	10.2	0	0	0	0	0	0	0	0	0	0	1	0	65	2	3	0	0	1	72	72.2	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	8	1	2	0	0	0	11	11	0	0	1	0	0	0	1	0	2	3.3	0	0	59	2	6	2	0	0	69	70	0	0	0
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08:45	0	0	0	0	0	0	0	0	0	0	0	0	23	1	2	0	0	0	26	26	0	0	12	1	0	0	0	0	13	13	1	0	81	1	4	0	0	1	88	88.2	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	53	4	10	0	0	0	68	67.2	0	0	18	2	0	0	2	0	22	24.6	3	0	287	5	18	5	0	2	320	322.1	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	1	0	19	0	3	0	0	1	24	24.2	0	0	10	0	1	0	0	0	11	11	0	0	65	3	8	1	0	2	79	81.5	0	0	0
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09:30	0	0	0	0	0	0	0	0	0	0	0	0	10	1	5	1	0	0	17	17.5	0	0	7	0	1	0	0	0	8	8	0	0	28	3	7	1	0	1	40	41.5	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	20	1	3	0	0	1	25	26	0	0	13	1	0	0	0	0	14	14	0	0	33	3	5	3	0	1	45	47.5	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	62	2	14	1	0	2	82	83.7	0	0	39	3	2	0	0	0	44	44	0	0	181	11	21	5	0	5	223	230.5	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	1	0	16	0	4	0	0	0	21	20.2	0	0	9	0	1	0	0	0	10	10	0	0	38	0	2	0	0	1	41	42	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	75	2	13	2	0	1	94	95.2	0	0	54	0	6	1	2	0	63	66.1	0	0	148	6	19	5	2	6	186	197.1	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	74	8	11	4	0	1	98	101	0	1	61	0	5	2	0	0	69	69.4	0	0	171	12	22	4	0	4	213	219	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	108	2	8	1	0	0	119	119.5	0	0	55	0	5	1	0	0	61	61.5	2	0	190	13	23	3	0	5	236	240.9	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	74	4	8	1	0	1	88	89.5	0	0	68	4	3	0	0	0	75	75	2	0	179	6	22	5	0	10	224	234.9	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	91	3	12	0	0	1	107	108	0	0	51	0	4	0	0	0	55	55	1	0	176	6	23	1	0	4	211	214.7	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	108	5	6	0	0	0	120	119.2	0	0	34	1	5	0	0	0	40	40	0	2	183	9	17	0	1	6	218	224.1	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	129	2	2	0	0	0	133	133	0	0	44	1	3	0	0	0	48	48	1	1	165	14	12	0	0	4	197	199.6	0	0	0
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	86	2	3	0	0	0	91	91	0	0	20	0	3	0	0	0	23	23	0	0	137	5	16	0	1	3	162	166.3	0	0	0
12 TOT	0	0	0	0	0	0	0	0	0	0	5	0	980	40	103	10	0	8	1146	1155	0	1	509	12	42	5	5	0	574	582.4	11	3	2187	103	227	34	4	60	2629	2700.6	0	0	0

B => B							B => C										C => A										C => B										C => C								
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV
0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
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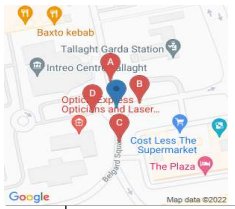

IDASO

Survey Name: 039 22056 Belgard Road Traffic Quotations
Site: Site 4
Location: Belgard Square E/Unnamed Road
Date: Tue 15-Feb-2022

	A => A									A => B									A => C									A => D									
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
07:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
07:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	0	0	0	7	7	0	0	1	1	1	0	0	1	4	5	0	0	1	0	0	0	0	0	1	1	0	0	20
07:30	0	0	0	0	0	0	0	0	0	0	0	0	12	0	3	0	0	0	15	15	1	0	2	0	0	0	0	0	3	2.2	0	0	2	0	0	0	0	0	2	2	0	0	34
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	27	0	11	0	0	0	38	38	1	0	5	1	2	0	0	1	10	10.2	0	0	7	0	0	0	0	0	7	7	0	0	118
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17:30	0	0	1	0	0	0	0	0	1	1	0	1	46	1	1	0	0	0	49	48.4	0	0	15	2	0	0	0	0	17	17	0	0	4	0	0	0	0	0	4	4	0	0	36
17:45	0	0	0	0	0	0	0	0	0	0	0	0	32	0	1	0	0	0	33	33	0	0	8	0	0	0	0	0	8	8	0	0	4	0	0	0	0	0	4	4	0	0	39
H/TOT	0	0	2	0	0	0	0	0	2	2	0	1	158	1	7	0	0	0	167	166.4	0	0	54	3	1	0	0	0	58	58	0	0	17	0	0	0	0	0	17	17	0	1	136
18:00	0	0	2	0	0	0	0	0	2	2	0	0	42	0	2	0	0	0	44	44	0	0	7	0	1	0	0	0	8	8	0	0	4	0	0	0	0	0	4	4	0	0	34
18:15	0	0	1	0	0	0	0	0	1	1	0	0	38	0	1	0	0	0	39	39	0	0	13	0	0	0	0	0	13	13	0	0	2	0	0	0	0	0	2	2	0	0	27
18:30	0	0	0	0	0	0	0	0	0	0	0	0	34	0	2	1	0	0	37	37.5	0	0	7	1	1	0	0	0	9	9	0	0	1	0	0	0	0	0	1	1	0	0	26
18:45	0	0	0	0	0	0	0	0	0	0	0	0	26	0	3	0	0	0	29	29	0	0	9	1	1	0	0	0	11	11	0	0	3	0	0	0	0	0	3	3	0	0	30
H/TOT	0	0	3	0	0	0	0	0	3	3	0	0	140	0	8	1	0	0	149	149.5	0	0	36	2	3	0	0	0	41	41	0	0	10	0	0	0	0	0	10	10	0	0	117
12 TOT	0	0	24	0	5	0	0	0	29	29	4	3	1219	14	90	8	0	0	1338	1337	4	0	418	28	51	3	1	8	513	520.6	3	0	230	7	18	3	1	0	262	262.4	4	3	1714

B => A							B => B										B => C										B => D										C => A								
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV
0	4	0	0	0	23	23	0	0	0	0	0	0	0	0	0	0	0	0	9	0	1	1	1	1	13	15.8	0	0	0	0	0	0	0	0	0	0	0	0	12	0	1	0	0	1
0	2	0	0	0	22	22	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	9	9	0	0	3	0	1	0	0	0	4	4	0	0	10	0	3	0	0	0
1	2	0	0	0	37	37	0	0	0	0	0	0	0	0	0	0	0	0	20	1	2	0	0	0	23	23	0	0	5	0	2	0	0	0	7	7	0	0	21	0	2	1	0	1
0	4	0	0	1	50	51	0	0	0	0	0	0	0	0	0	0	0	0	27	0	3	0	0	0	30	30	0	1	11	0	1	0	0	0	13	12.4	0	0	30	0	2	0	0	1
1	12	0	0	1	132	133	0	0	0	0	0	0	0	0	0	0	0	0	65	1	6	1	1	1	75	77.8	0	1	19	0	4	0	0	0	24	23.4	0	0	73	0	8	1	0	3
2	1	0	0	0	54	54	0	0	0	0	0	0	0	0	0	0	0	0	27	0	3	1	0	0	31	31.5	1	0	6	0	0	0	0	0	7	6.2	0	0	26	0	0	0	0	1
1	2	1	0	0	49	49.5	0	0	0	0	0	0	0	0	0	0	0	0	29	4	2	0	0	0	35	35	0	0	13	0	1	2	0	0	16	17	0	0	28	1	8	2	0	0
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3	6	0	0	0	63	63	0	0	2	0	0	0	0	0	2	2	0	0	30	2	1	0	0	0	33	33	1	0	52	0	1	0	0	0	54	53.2	0	0	27	2	3	1	0	2
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6	16	1	0	0	172	172.5	0	0	3	0	0	0	0	0	3	3	0	0	120	3	9	0	0	0	132	132	1	0	174	5	6	3	0	0	189	189.7	0	0	97	8	10	3	0	5
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0	4	0	2	1	40	43.6	0	0	0	0	0	0	0	0	0	0	0	0	32	1	7	0	0	1	41	42	0	0	37	2	2	0	0	0	41	41	0	0	34	1	2	3	0	3
3	15	1	3	1	149	154.4	0	0	1	0	1	0	0	0	2	2	0	0	104	5	12	4	0	2	127	131	0	0	166	3	8	1	0	0	178	178.5	0	0	98	4	8	4	0	6
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7	12	2	0	1	157	158.2	0	0	0	0	0	0	0	0	0	0	0	0	118	11	11	3	0	1	144	146.5	0	0	152	10	9	0	1	0	172	173.3	0	0	102	4	12	2	0	2
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1	4	0	0	0	43	43	0	0	2	0	0	0	0	0	2	2	0	0	32	2	3	0	0	1	38	39	0	0	51	1	2	0	0	0	54	54	0	0	31	1	3	0	0	2
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7	13	1	0	0	168	167.7	0	0	3	0	0	0	0	0	3	3	0	0	108	14	7	3	0	2	134	137.5	0	0	190	3	7	2	0	0	202	203	0	0	131	8	16	4	0	7
1	3	0	0	0	49	47.6	0	0	1	0	0	0	0	0	1	1	0	0	31	3	4	0	0	1	39	40	0	0	56	0	1	0	0	0	57	57	0	0	27	4	2	1	0	1
1	3	0	0	0	39	39	0	0	1	0	0	0	0	0	1	1	0	0	22	4	5	1	0	0	32	32.5	0	0	29	1	6	0	0	0	36	36	0	0	29	3	1	0	0	2
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0	7	0	0	0	73	73	0	0	0	0	0	0	0	0	0	0	0	0	31	4	2	0	0	0	37	37	0	0	33	0	2	0	0	0	35	35	0	0	28	2	4	2	0	4
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0	6	0	0	0	36	36	0	0	0	0	0	0	0	0	0	0	0	0	27	0	3	0	0	0	30	30	0	0	37	0	2	0	0	0	39	39	0	0	22	0	1	1	0	1
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1	7	1	0	0	47	47.5	0	0	1	0	0	0	0	0	1	1	0	0	36	3	5	0	0	0	44	44	0	0	38	0	1	0	0	0	39	39	0	0	25	0	1	2	0	3
3	22	1	0	0	172	172.5	0	0	1	0	0	0	0	0	1	1	0	0	122	12	17	0	0	0	151	151	1	0	133	2	6	0	0	0	142	141.2	0	0	94	1	7	3	0	8
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0	4	0	0	0	34	34	0	0	0	0	0	0	0	0	0	0	0	1	25	2	1	0	0	0	29	28.4	0	1	41	1	1	0	0	0	44	43.4	0	0	27	5	4	0	0	1
1	2	1	0	0	43	43.5	0	0	0	0	0	0	0	0	0	0	0	0	28	0	2	0	0	0	30	30	0	1	38	1	1	0	0	0	41	40.4	0	0	30	0	3	0	0	0
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9	10	0	0	0	139	138.4	0	0	1	0	0	0	0	0	1	1	1	0	100	13	19	1	1	1	136	138	0	0	132	7	10	1	0	0	150	150.5	0	1	92	4	11	0	1	6
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6	7	0	0	0	150	149.4	0	0	3	0	0	0	0	0	3	3	0	0	122	7	9	0	0	0	138	138	0	0	91	1	8	0	0	0	100	100	0	0	104	6	4	0	0	4
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1	18	1	0	0	137	137.5	0	0	0	0	0	0	0	0	0	0	1	0	95	5	2	0	0	0	103	102.2	0	0	55	1	4	0	0	0	60	60	0	0	95	2	8	0	1	3
53	170	9	3	3	1959	1965.4	0	0	18	0	1	0	0	0	19	19	2	1	1293	100	119	16	2	9	1542	1559.4	3	3	1509	38	82	10	1	0	1646	1648.1	1	1	1232	56	120	25	2	57

		C => B										C => C										C => D										D => A												
TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
14	15	0	0	18	0	3	0	0	0	21	21	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1.5	0	0	0
13	13	0	0	14	0	3	0	1	1	19	21.3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
25	26.5	0	0	28	2	3	2	0	0	35	36	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2	0	0	1	0	1	1	0	0	3	3.5	0	0	2
33	34	0	0	11	1	3	0	0	1	16	17	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5	0	0	0	0	1	0	0	0	1	1	0	0	5
85	88.5	0	0	71	3	12	2	1	2	91	95.3	0	0	1	0	0	0	0	0	1	1	0	0	7	0	2	0	0	0	9	9	0	0	1	0	2	2	0	0	5	6	0	0	7
27	28	0	0	31	3	5	0	0	1	40	41	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	0	0	1	0	0	0	0	0	1	1	0	0	2
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47	48	0	0	50	2	4	3	0	0	59	60.5	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	5	0	0	1	0	0	0	0	0	1	1	0	0	5
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149	152.2	0	0	142	13	18	3	0	2	178	181.5	0	0	2	0	1	0	0	0	3	3	0	0	12	0	1	0	0	0	13	13	0	0	6	0	0	0	0	0	6	6	0	0	14
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33	34	0	0	23	3	3	0	0	2	31	33	0	0	1	0	0	0	0	0	1	1	0	0	7	0	2	0	0	0	9	9	0	0	2	0	0	0	0	0	2	2	0	0	4
23	24.5	0	0	22	4	3	2	0	0	31	32	0	0	0	0	2	0	0	0	2	2	0	0	6	0	0	0	0	0	6	6	0	0	2	0	1	0	0	0	3	3	0	0	16
32	33.5	0	0	27	1	3	0	0	1	32	33	0	0	2	0	0	0	0	0	2	2	0	0	1	0	0	0	0	0	1	1	0	0	6	0	0	0	0	0	6	6	0	0	25
123	129.5	0	0	91	9	12	3	0	3	118	122.5	0	0	4	0	2	0	0	0	6	6	0	0	19	0	2	0	0	0	21	21	0	0	14	0	1	0	0	0	15	15	0	0	56
24	25	1	0	26	4	3	3	0	2	39	41.7	0	0	3	0	0	1	0	0	4	4.5	0	0	2	1	1	0	0	0	4	4	0	0	3	0	0	0	0	0	3	3	0	0	18
23	25	0	0	21	4	7	0	0	1	33	34	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	4	0	0	4	0	2	0	0	0	6	6	1	0	25
30	30.5	0	0	32	2	3	0	0	1	38	39	0	0	1	0	0	0	0	0	1	1	0	0	5	0	1	0	0	0	6	6	0	0	6	0	0	1	0	0	7	7.5	0	0	24
43	47.5	0	0	32	4	4	0	0	0	40	40	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	5	0	0	9	0	1	0	0	0	10	10	0	0	37
120	128	1	0	111	14	17	3	0	4	150	154.7	0	0	4	0	0	1	0	0	5	5.5	0	0	15	1	3	0	0	0	19	19	0	0	22	0	3	1	0	0	26	26.5	1	0	104
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33	34.5	0	0	30	4	4	1	0	2	41	43.5	0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	6	6	0	0	29
39	39.5	0	1	34	2	2	0	0	0	39	38.4	0	0	1	1	0	0	0	0	2	2	0	0	4	0	0	1	0	0	5	5.5	0	0	5	0	1	0	0	0	6	6	0	0	21
27	28	0	0	38	3	1	1	0	1	44	45.5	0	0	2	0	0	0	0	0	2	2	0	0	1	0	0	0	0	0	1	1	0	0	4	0	2	1	0	0	7	7.5	0	0	21
122	125	0	1	127	9	8	2	0	4	151	155.4	0	0	6	1	0	0	0	0	7	7	0	0	8	0	2	1	0	0	11	11.5	0	0	22	1	4	1	0	0	28	28.5	0	0	91
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137	145.5	0	2	139	6	9	3	0	5	164	169.3	0	0	4	1	0	0	0	0	5	5	0	0	14	0	4	0	0	0	18	18	0	0	33	2	7	0	0	0	42	42	0	0	140
25	26.5	0	0	35	1	5	1	0	0	42	42.5	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10	10	0	0	35
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113	122.5	0	0	156	4	14	3	0	2	179	182.5	0	0	10	0	0	0	0	0	10	10	0	0	13	0	0	0	0	0	13	13	1	0	35	0	1	0	0	0	37	36.2	0	0	123
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137	141.5	0	0	151	12	15	1	1	4	184	189.8	0	0	5	2	0	0	0	0	7	7	0	0	9	0	1	0	0	0	10	10	1	0	29	1	1	0	0	0	32	31.2	0	1	124
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115	121.7	0	0	133	9	9	0	0	2	153	155	0	0	7	1	0	0	0	0	8	8	0	0	16	0	0	0	0	0	16	16	0	0	33	1	5	0	0	0	39	39	1	1	123
23	24	0	0	38	0	1	0	0	0	39	39	0	0	6	0	1	0	0	0	7	7	0	0	4	0	1	0	0	0	5	5	1	1	8	0	0	0	0	0	10	8.6	1	0	44
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41	43	0	0	36	3	0	0	0	2	41	43	0	0	2	0	0	0	0	0	2	2	0	0	2	0	0	0	0	0	2	2	0	0	11	0	0	0	0	0	11	11	0	0	32
118	122	0	0	158	9	5	0	0	3	175	178	0	0	11	0	1	0	0	0	12	12	0	0	14	0	1	0	0	0	15	15	1	1	28	0	2	0	0	0	32	30.6	1	0	153
35	35	0	0	45	1	2	0	0	1	49	50	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5	0	0	13	0	1	0	0	0	14	14	0	0	43
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18	20.3	0	0	24	4	0	0	0	1	29	30	0	0	1	0	0	0	0	0	1	1	0	0	3	0	0	0	0	0	3	3	0	0	6	0	0	0	0	0	6	6	0	0	7
109	113.3	0	0	144	9	8	0	0	4	165	169	0	0	2	1	0	0	0	0	3	3	0	0	13	0	0	0	0	0	13	13	0	0	28	0	3	0	0	0	31	31	0	0	105
1494	1564.7	1	3	1565	103	140	23	2	38	1875	1924.5	0	0	60	6	4	1	0	0	71	71.5	0	0	158	1	18	1	0	0	178	178.5	3	1	286	5	29	5	0	0	329	328.5	3	2	1196

D => B							D => C										D => D									
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	2	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	3	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1	0	2	1	0	11	13.3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
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0	1	0	0	0	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	1	0	0	0	22	22	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	2	0	0	0	107	107	0	0	10	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
20	71	8	3	0	1303	1307.3	0	1	116	6	12	4	0	0	139	140.4	0	0	9	0	0	0	0	0	9	9

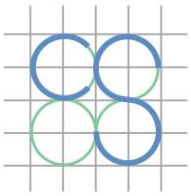
IDASO

Survey Name: 039 22056 Belgard Road Traffic Quotations
Site: Site 5
Location: R113/Unnamed Road
Date: Tue 15-Feb-2022

	A => A										A => B										A => C										B => A									
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR
07:00	0	0	1	0	0	1	0	0	2	2.5	0	0	13	0	8	2	0	0	23	24	0	0	1	0	0	0	0	0	1	1	1	0	53	0	11	0	0	4	69	72.2	0	0	0
07:15	0	0	3	0	0	0	0	0	3	3	1	0	17	1	4	2	0	0	25	25.2	0	0	2	0	0	0	0	0	2	2	2	1	73	2	15	1	0	3	97	98.3	0	0	1
07:30	0	0	2	0	1	0	1	0	4	5.3	0	0	21	2	7	3	0	1	34	36.5	0	0	4	0	4	1	0	0	9	9.5	1	0	76	1	12	2	0	3	95	98.2	0	0	0
07:45	0	0	4	1	1	0	0	0	6	6	1	0	26	0	6	4	0	0	37	38.2	0	0	10	0	3	0	0	0	13	13	0	0	90	4	10	2	0	5	111	117	0	0	0
H/TOT	0	0	10	1	2	1	1	0	15	16.8	2	0	77	3	25	11	0	1	119	123.9	0	0	17	0	7	1	0	0	25	25.5	4	1	292	7	48	5	0	15	372	385.7	0	0	1
08:00	0	0	7	1	0	0	1	0	9	10.3	0	0	34	1	6	1	0	0	42	42.5	0	0	4	1	1	1	0	0	7	7.5	0	0	89	2	11	1	1	5	109	115.8	0	0	0
08:15	0	0	7	0	0	0	0	0	7	7	0	0	44	0	7	3	0	1	55	57.5	0	0	13	1	2	1	0	0	17	17.5	1	0	110	3	6	2	1	3	126	130.5	0	0	1
08:30	0	0	8	0	2	0	0	0	10	10	0	0	29	0	7	3	0	0	39	40.5	0	0	13	0	0	0	0	0	13	13	1	1	113	3	9	0	1	5	133	137.9	0	0	0
08:45	0	0	5	1	2	0	0	0	8	8	0	0	36	0	8	1	1	0	46	47.8	0	0	19	0	1	1	0	0	21	21.5	2	2	140	5	9	1	0	5	164	166.7	0	0	0
H/TOT	0	0	27	2	4	0	1	0	34	35.3	0	0	143	1	28	8	1	1	182	188.3	0	0	49	2	4	3	0	0	58	59.5	4	3	452	13	35	4	3	18	532	550.9	0	0	1
09:00	0	0	4	0	0	0	0	0	4	4	0	0	58	1	10	4	1	0	74	77.3	2	0	15	2	2	0	0	0	21	19.4	1	1	110	5	16	0	0	4	137	139.6	0	0	1
09:15	0	0	3	1	3	0	0	0	7	7	0	1	55	1	11	3	0	0	71	71.9	0	0	17	1	2	0	0	0	20	20	0	1	95	8	9	3	0	3	119	122.9	0	0	0
09:30	0	0	6	0	2	0	0	0	8	8	0	0	42	4	6	1	0	0	53	53.5	0	0	17	0	2	0	0	0	19	19	0	0	88	5	8	1	1	4	107	112.8	0	0	2
09:45	0	0	7	0	3	0	0	0	10	10	0	0	55	2	10	3	1	0	71	73.8	0	0	13	0	2	0	0	0	15	15	0	0	74	5	3	3	0	3	88	92.5	0	0	0
H/TOT	0	0	20	1	8	0	0	0	29	29	0	1	210	8	37	11	2	0	269	276.5	2	0	62	3	8	0	0	0	75	73.4	1	2	367	23	36	7	1	14	451	467.8	0	0	3
10:00	0	0	6	1	2	0	0	0	9	9	0	0	51	3	5	3	0	0	62	63.5	0	0	16	1	4	0	0	0	21	21	0	0	53	8	7	4	1	5	78	86.3	0	0	0
10:15	0	0	10	1	3	0	0	0	14	14	0	1	59	1	13	2	0	0	76	76.4	0	0	14	1	0	0	1	0	16	17.3	0	0	64	2	7	0	0	1	74	75	0	0	0
10:30	0	0	10	0	3	0	0	0	13	13	0	0	44	1	11	1	0	0	57	57.5	0	0	23	2	0	0	0	0	25	25	2	0	61	3	10	1	0	3	80	81.9	0	0	0
10:45	0	0	8	1	2	0	0	0	11	11	0	0	49	2	11	2	0	0	64	65	0	0	16	3	3	0	0	0	22	22	0	0	82	4	10	1	1	3	101	105.8	0	0	0
H/TOT	0	0	34	3	10	0	0	0	47	47	0	1	203	7	40	8	0	0	259	262.4	0	0	69	7	7	0	1	0	84	85.3	2	0	260	17	34	6	2	12	333	349	0	0	0
11:00	0	0	5	1	1	0	0	0	7	7	1	0	62	3	5	3	0	0	74	74.7	0	0	23	0	0	1	0	0	24	24.5	0	1	62	1	14	2	0	3	83	86.4	0	0	0
11:15	0	0	7	2	2	0	0	0	11	11	0	0	53	0	7	3	0	0	63	64.5	0	0	18	0	0	0	0	0	18	18	1	0	65	4	8	4	0	3	85	89.2	0	0	2
11:30	0	0	11	0	1	0	0	0	12	12	0	0	65	0	11	4	0	0	80	82	0	0	17	2	1	0	0	0	20	20	0	0	67	3	8	3	2	2	85	91.1	0	0	0
11:45	0	0	4	2	0	0	0	0	6	6	1	0	80	5	7	1	0	0	94	93.7	0	0	24	2	1	1	0	0	28	28.5	0	0	81	3	9	2	0	4	99	104	0	0	0
H/TOT	0	0	27	5	4	0	0	0	36	36	2	0	260	8	30	11	0	0	311	314.9	0	0	82	4	2	2	0	0	90	91	1	1	275	11	39	11	2	12	352	370.7	0	0	2
12:00	0	0	4	1	0	0	0	0	5	5	0	0	85	2	4	1	0	0	92	92.5	0	0	23	2	3	0	0	0	28	28	0	0	64	2	10	0	0	4	80	84	0	0	0
12:15	0	0	10	1	1	0	0	0	12	12	0	0	56	2	9	2	0	0	69	70	0	0	30	0	1	0	0	1	32	33	0	1	72	7	10	2	1	2	95	98.7	0	0	0
12:30	0	0	10	2	2	0	0	0	14	14	0	0	73	1	9	2	0	0	85	86	0	0	31	0	2	0	0	0	33	33	0	0	83	2	6	2	0	2	95	98	0	0	1
12:45	0	0	15	2	1	0	0	0	18	18	0	0	86	0	4	1	0	0	91	91.5	1	0	20	1	2	1	0	1	26	26.7	0	1	92	3	7	2	0	4	109	113.4	0	0	1
H/TOT	0	0	39	6	4	0	0	0	49	49	0	0	300	5	26	6	0	0	337	340	1	0	104	3	8	1	0	2	119	120.7	0	2	311	14	33	6	1	12	379	394.1	0	0	2
13:00	0	0	11	0	0	0	0	0	11	11	0	0	81	2	11	3	0	1	98	100.5	0	0	26	0	2	1	0	0	29	29.5	0	1	65	5	8	2	0	3	84	87.4	0	0	0
13:15	0	0	10	0	0	0	0	0	10	10	1	0	70	3	11	4	0	1	90	92.2	0	0	24	2	1	0	0	0	27	27	0	0	72	3	3	2	0	2	82	85	0	0	1
13:30	0	0	14	1	0	1	0	0	16	16.5	0	0	66	2	6	0	0	0	74	74	0	0	22	0	3	2	0	0	27	28	0	0	61	1	12	3	1	3	81	86.8	0	0	0
13:45	0	0	15	0	3	0	0	0	18	18	1	0	67	1	10	1	0	0	80	79.7	0	0	25	0	2	0	0	0	27	27	0	0	82	3	5	1	1	2	94	97.8	0	0	1
H/TOT	0	0	50	1	3	1	0	0	55	55.5	2	0	284	8	38	8	0	2	342	346.4	0	0	97	2	8	3	0	0	110	111.5	0	1	280	12	28	8	2	10	341	357	0	0	2
14:00	0	0	16	0	2	0	0	0	18	18	0	0	88	2	11	3	1	0	105	107.8	0	0	17	0	2	0	0	0	19	19	1	0	65	1	6	0	0	4	77	80.2	0	0	1
14:15	0	0	12	1	2	0	0	0	15	15	1	0	67	2	8	0	0	0	78	77.2	0	0	26	3	3	0	0	0	32	32	0	0	83	3	8	2	1	3	100	105.3	0	0	1
14:30	0	0	9	1	3	0	0	0	13	13	2	0	71	2	8	1	0	0	84	82.9	0	0	24	1	2	0	0	0	27	27	0	0	69	2	3	0	0	1	75	76	0	0	0
14:45	0	0	8	1	0	0	0	0	9	9	0	0	80	2	10	0	0	0	92	92	0	0	9	0	3	0	0	0	12	12	1	0	93	11	12	4	0	3	124	128.2	0	0	1
H/TOT	0	0	45	3	7	0	0	0	55	55	3	0	306	8	37	4	1	0	359	359.9	0	0	76	4	10	0	0	0	90	90	2	0	310	17	29	6	1	11	376	389.7	0	0	3
15:00	0	0	9	0	2	0	0	0	11	11	0	0	93	1	12	2	2	0	110	113.6	0	0	20	3	1	0	0	0	24	24	0	1	69	3	7	4	0	4	88	93.4	0	0	1
15:15	0	0	11	2	1	0	0	0	14	14	1	2	90	4	11	3	0	0	111	110.5	0	1	15	0	2	0	0	0	18	17.4	1	0	77	7	7	3	0	2	97	99.7	0	0	0
15:30	0	0	6	1	1	0	0	0	8	8	0	1	73	5	11	1	0	0	91	90.9	0	0	24	0	0	0	0	0	24	24	0	0	81	2	7	0	2	4	96	102.6	0	0	0
15:45	0	0	14	0	3	0	0	0	17	17	0	0	82	2	15	1	0	1	101	102.5	0	0	25	1	3	0	0	1	30	31	0	0	74	5	11	2	0	2	94	97	0	0	2
H/TOT	0	0	40	3	7	0	0	0	50	50	1	3	338	12	49	7	2	1	413	417.5	0	1	84	4	6	0	0	1	96	96.4	1	1	301	17	32	9	2	12	375	392.7	0	0	3
16:00	0	0	6	0	0	1	0	0	7	7.5	2	1	96	5	12	0	0	0	116	113.8	0	0	20	3	3	0	0	0	26	26	0	0	65	2	12	1	0	3	83	86.5	0	0	1
16:15	0	0	16	0	1	0	0	0	17	17	0	1	95	6	17	0	1	0	120	120.7	0	0	14	2	2	0	0	0	18	18	1	0	83	9	12	0	0	3	108	110.2	0	0	1
16:30	0	0	7	0	1	0	0	0	8	8	0	0	91	1	12	3	0	0	107	108.5	0	0	15	2	2	0	0	0	19	19	0	0	81	1	12	3	0	4	101	106.5	0	0	2
16:45	0	0	5	0	2	0	0	0	7	7	1	1	84	9	18	1	0	0	114	113.1	0	0	15	1	3	0	0	0	19	19	1	0	77	2	6	2	1	5	94	100.5	0	0	1
H/TOT	0	0	34	0	4	1	0	0	39	39.5	3	3	366	21	59	4	1	0	457	456.1	0	0	64	8	10	0	0	0	82	82	2	0	306	14	42	6	1	15	386	403.7	0	0	5
17:00	0	0	14	0	0	0	0	0	14	14	0	0	106	3	7	3	0	0	119	120.5	0	0	21	1	1	0	0	0	23	23	1	0	61	2	9	1	0	2	76	77.7	0	0	0
17:15	0	0	12	0	4	0	0	0	16	16	2	0	97	0	12	1	0	0	112	110.9	0	0	18	2	0	0	0	0	20	20	0	1	74	1	13	0	0	4	93	96.4	0	0	1
17:30	0	0	8	1	0	0	0	0	9	9	3	1	97	2	10	1	0	0	114	111.5	0	0	19	3	3	0	0	0	25	25	0	0	73	2	3	2	0	3	83	87	0	0	0
17:45	0	0	5	0	1	0	0	0	6	6	0	1	91	3	9	0	0	0	104	103.4	0	0	23	1	1	0	0	0	25	25	0	0	83	3	8	1	0	4	99	103.5	0	0	0
H/TOT	0	0	39	1	5	0	0	0	45	45	5	2	391	8	38	5	0	0	449	446.3	0	0	81	7	5	0	0	0	93	93	1	1	291	8	33	4	0	13	351	364.6	0	0	1
18:00	0	0	11	0	0	0	0	0	11	11	0	0	76	0	9	0	1	0	86	87.3	0	0	15	0	4	0	0	0	19	19	0	0	61	1	5	0	0	3	70	73	0	0	0
18:15	0	0	11	0	0	0	0	0	11	11	1	2	72	1	2	1	0	0	79	77.5	0	0	16	1	1	0	0	0	18	18	0	0	67	1	6	0	1	4	79	84.3	0	0	2
18:30	0	0	14	1	2	0	0	0	17	17	0	0	76	1	6	1	0	0	84	84.5	0	0	9	0	0	0	0	0	9	9	0	0	66	2	7	1	0	3	79	82.5	0	0	2
18:45	0	0	3	0	1	0	0	0	4	4	0	2	70	0	6	0	1	1	80	81.1	0	0	15	1	1	0	0	0	17	17	0	0	65	0	4	1	0	3	73	76.5	0	0	0
H/TOT	0	0	39	1	3	0	0	0	43	43	1	4	294	2	23	2	2	1	329	330.4	0	0	55	2	6	0	0	0	63	63	0	0	259	4	22	2	1	13	301	316.3	0	0	4
12 TOT	0	0	404	27	61	3	2	0	497	501.1	19	14	3172	91	430	85	9	6	3826	3862.6	3	1	840	46	81	10	1	3	985	991.3	18	12	3704	157	411	74	16	157	4549	4742.2	0	0	27

B => B							B => C										C => A										C => B										C => C									
TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV
0	0	0	0	0	0	0	0	1	30	2	5	2	1	1	42	44.7	1	0	10	0	2	1	0	0	14	13.7	0	0	15	0	4	1	0	0	20	20.5	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	0	25	5	3	0	0	0	33	33	0	0	6	1	3	0	1	1	12	14.3	0	0	14	0	4	0	0	0	18	18	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	63	1	5	0	0	0	69	69	0	0	9	2	3	2	0	0	16	17	0	0	31	2	4	0	1	0	38	39.3	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	78	0	7	0	0	1	87	87.4	0	0	5	0	1	1	0	1	8	9.5	0	0	23	1	6	0	0	0	30	30	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	2	196	8	20	2	1	2	231	234.1	1	0	30	3	9	4	1	2	50	54.5	0	0	83	3	18	1	1	0	106	107.8	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0	84	4	4	1	0	0	94	93.7	0	0	19	1	0	0	0	0	20	20	0	0	21	2	6	0	0	1	30	31	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	0	74	3	4	2	0	0	83	84	0	0	13	2	3	0	0	1	19	20	0	0	26	4	5	0	0	0	35	35	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0	91	0	6	1	0	0	99	98.7	1	0	25	1	3	2	0	0	32	32.2	0	0	41	1	4	2	0	0	48	49	0	0	0	0	0	0	0	0
1	0	0	0	0	1	1	0	0	121	5	4	0	0	0	130	130	0	0	15	0	3	1	0	0	19	19.5	0	0	37	3	1	0	0	0	41	41	0	0	0	0	0	0	0	0
1	0	0	0	0	2	2	2	0	370	12	18	4	0	0	406	406.4	1	0	72	4	9	3	0	1	90	91.7	0	0	125	10	16	2	0	1	154	156	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	0	129	5	8	0	0	0	142	142	0	0	12	0	2	0	0	0	14	14	0	0	40	2	2	2	0	0	46	47	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	117	4	9	2	0	0	132	133	0	0	15	1	1	0	0	2	19	21	0	0	31	2	8	1	0	0	42	42.5	0	0	0	0	0	0	0	0
0	0	0	0	0	2	2	0	0	96	2	8	1	0	0	107	107.5	0	0	16	3	3	0	0	0	22	22	0	0	36	3	3	2	0	0	44	45	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0	89	4	8	1	0	0	103	102.7	0	0	31	1	3	2	0	1	38	40	0	0	48	0	2	0	0	0	50	50	0	0	0	0	0	0	0	0
0	0	0	0	0	3	3	1	0	431	15	33	4	0	0	484	485.2	0	0	74	5	9	2	0	3	93	97	0	0	155	7	15	5	0	0	182	184.5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	90	3	7	2	0	1	103	105	1	0	22	2	4	1	0	1	31	31.7	0	0	54	3	9	1	0	1	68	69.5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	104	2	12	1	0	0	119	119.5	0	0	19	3	9	0	0	1	32	33	1	0	53	3	6	1	0	0	64	63.7	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	86	3	2	3	0	0	94	95.5	0	0	23	1	1	0	0	0	25	25	1	0	69	1	8	0	0	1	80	80.2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	93	3	12	0	2	3	113	118.6	0	0	23	2	3	0	0	0	28	28	0	0	59	2	1	0	0	0	62	62	0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	373	11	33	6	2	4	429	438.6	1	0	87	8	17	1	0	2	116	117.7	2	0	235	9	24	2	0	2	274	275.4	0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	82	9	4	1	1	0	97	98.8	0	0	13	0	4	0	0	1	18	19	0	0	58	1	3	0	0	0	62	62	0	0	0	0	0	0	0	0
0	0	0	0	0	2	2	1	0	83	6	6	0	0	0	96	95.2	0	0	20	3	3	0	1	1	28	30.3	0	0	69	5	2	2	1	1	80	83.3	0	0	0	0	1	0	0	0
1	0	0	0	0	1	1	0	0	90	6	9	0	0	1	106	107	0	1	22	2	3	1	0	0	29	28.9	0	0	69	2	3	0	0	0	74	74	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	102	6	7	2	0	0	117	118	0	0	16	3	1	0	0	1	21	22	0	0	65	3	4	1	0	0	73	73.5	0	0	0	0	0	0	0	0
1	0	0	0	0	3	3	1	0	357	27	26	3	1	1	416	419	0	1	71	8	11	1	1	3	96	100.2	0	0	261	11	12	3	1	1	289	292.8	0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	2	0	84	3	4	2	0	0	95	94.4	0	0	27	1	3	1	0	1	33	34.5	0	0	92	2	7	2	0	0	103	104	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	106	8	4	2	0	0	120	121	0	0	20	1	1	0	0	0	22	22	2	0	76	2	4	1	0	0	85	83.9	0	0	0	0	0	0	0	0
1	1	0	0	0	3	3	0	0	90	5	9	0	0	1	105	106	0	2	26	1	5	1	0	0	35	34.3	0	1	92	3	2	1	0	0	99	98.9	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	0	103	6	8	1	0	0	118	118.5	0	0	33	0	3	0	0	2	38	40	0	0	77	1	4	0	0	0	82	82	0	0	1	0	0	0	0	0
1	1	0	0	0	4	4	2	0	383	22	25	5	0	1	438	439.9	0	2	106	3	12	2	0	3	128	130.8	2	1	337	8	17	4	0	0	369	368.8	0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	1	1	114	3	8	0	0	0	127	125.6	0	0	23	1	3	0	0	1	28	29	0	1	85	2	7	2	0	0	97	97.4	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	0	79	5	15	1	0	0	100	100.5	0	0	29	2	4	0	0	2	37	39	0	0	93	1	1	2	0	0	97	98	0	0	0	0	0	0	0	0
0	1	0	0	0	1	1	0	0	92	6	9	0	0	0	107	107	0	0	23	0	1	0	0	1	25	26	0	0	82	2	7	2	0	0	93	94	0	0	2	0	0	0	0	0
0	0	0	0	0	1	1	0	0	124	4	10	0	0	0	138	138	0	0	22	1	4	0	0	1	28	29	0	0	86	1	6	0	0	0	93	93	0	0	0	0	0	0	0	0
0	1	0	0	0	3	3	1	1	409	18	42	1	0	0	472	471.1	0	0	97	4	12	0	0	5	118	123	0	1	346	6	21	6	0	0	380	382.4	0	0	2	0	0	0	0	0
0	0	0	0	0	1	1	0	0	81	1	11	0	0	0	93	93	0	0	31	1	3	1	0	0	36	36.5	0	0	82	2	5	0	0	0	89	89	0	0	0	0	1	0	0	0
0	1	0	0	0	2	2	0	0	81	8	12	0	0	0	101	101	0	0	30	0	5	1	0	2	38	40.5	0	0	88	2	6	0	0	0	96	96	0	0	0	0	0	0	0	0
1	0	0	0	0	1	1	1	0	86	4	7	0	0	0	98	97.2	0	0	20	1	0	1	0	0	22	22.5	0	0	75	4	9	1	0	0	89	89.5	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	0	120	4	10	1	0	0	135	135.5	0	0	23	0	2	1	0	0	26	26.5	0	0	67	1	5	0	0	0	73	73	0	0	0	0	0	0	0	0
1	1	0	0	0	5	5	1	0	368	17	40	1	0	0	427	426.7	0	0	104	2	10	4	0	2	122	126	0	0	312	9	25	1	0	0	347	347.5	0	0	0	0	1	0	0	0
0	0	0	0	0	1	1	0	0	93	6	7	0	0	0	106	106	1	0	32	1	3	0	0	1	38	38.2	0	1	90	3	3	0	0	0	97	96.4	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	94	2	6	0	0	0	103	102.4	0	1	28	2	4	0	0	0	35	34.4	0	0	71	6	5	0	0	0	82	82	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	89	3	4	1	0	0	98	97.9	0	0	22	0	2	1	0	1	26	27.5	0	0	92	4	7	0	0	0	103	103	0	0	0	0	0	0	0	0
0	0	0	0	0	2	2	0	0	83	5	9	0	0	0	97	97	0	0	21	1	2	0	1	2	27	30.3	0	0	84	3	3	0	0	0	90	90	0	0	0	0	0	0	0	0
0	0	0	0	0	3	3	0	2	359	16	26	1	0	0	404	403.3	1	1	103	4	11	1	1	4	126	130.4	0	1	337	16	18	0	0	0	372	371.4	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	1	0	67	6	5	1	0	0	80	79.7	0	0	24	1	0	0	0	1	26	27	1	1	99	1	3	0	0	0	105	103.6	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	1	0	79	5	5	0	1	0	91	91.5	1	0	17	1	3	0	0	0	22	21.2	0	0	86	2	7	0	0	0	95	95	0	0	0	0	0	0	0	0
0	0	0	0	0	2	2	0	0	100	6	9	0	0	0	115	115	0	0	18	2	0	0	0	1	21	22	0	0	80	3	3	1	0	0	87	87.5	0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0	1	98	5	11	1	0	1	117	117.9	0	0	22	3	0	0	0	0	25	25	0	0	74	1	3	0	0	0	78	78	0	0	0	0	0	0	0	0
0	0	0	0	0	5	5	2	1	344	22	30	2	1	1	403	404.1	1	0	81	7	3	0	0	2	94	95.2	1	1	339	7	16	1	0	0	365	364.1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	74	6	6	0	0	0	87	86.4	0	0	21	0	2	0	0	0	23	23	2	0	119	2	5	0	0	0	128	126.4	0	0	1	0	0	0	0	0
1	0	0	0	0	2	2	0	0	74	1	5	0	0	0	80	80	0	0	21	1	1	0	0	0	23	23	0	0	108	1	6	0	0	0	115	115	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	65	6	5	0	0	0	76	76	1	0	27	0	1	0	0	1	30	30.2	1	1	111	3	4	0	0	0	120	118.6	0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0	0	81	1	7	0	0	0	89	89	0	0	32	2	1	0	0	2	37	39	0	0	73	1	2	0	0	0	76	76	0	0	0	0	0	0	0	0
1	0	0	0	0	2	2	0	1	294	14	23	0	0	0	332	331.4	1	0	101	3	5	0	0	3	113	115.2	3	1	411	7	17	0	0	0	439	436	0	0	1	1	0	0	0	0
0	0	0	0	0	0	0	0	0	65	2	5	0	0	0	72	72	0	0	30	1	0	0	0	1	32	33	1	0	107	2	3	0	0	0	113	112.2	0	0	0	0	0	0	0	0
0	1	0	0	0	3	3	0	0	66	1	5	1	0	0	73	73.5	0	0	29	0	1	0	0	1	31	32	0	0	91	2	3	0	0	0	96	96	0	0	0	0	0	0	0	0
0	0	0	0	0	2	2	0	0	60	4	6	0	0	0	70	70	0	0	16	0	3	0	0	1	20	21	0	0	80	1	3	1	0	0	85	85.5	0	0	1	0	0	0	0	0
0	1	0	0	0	1	1	0	0	54	3	3	0	0	0	60	60	0	0	13	2	0	0	0	1	16	17	0	0	59	0	5	0	0	0	64	64	0	0	0	0	0	0	0	0
0	2	0	0	0	6	6	0	0	245	10	19	1	0	0	275	275.5	0	0	88	3	4	0	0	4	99	103	1	0	337	5	14	1	0	0	358	357.7	0	0	1	0	0	0	0	0
5	5	0	0	0	37	37	10	7	4129	192	335	30	5	9	4717	4735.3	6	4	1014	54	112	18	3	34	1245	1284.7	9	5	3278	98	213	26	2	4	3635	3644.4	0	0	6	1	2	0	0	0

Appendix B: TRICS Data



CS CONSULTING

GROUP

Calculation Reference: AUDIT-656801-220426-0413

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : D - NURSERY
TOTAL VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	RB	REDBRIDGE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 375 to 666 (units: sqm)
Range Selected by User: 109 to 2350 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/14 to 19/11/21

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

Selected survey days:

Wednesday	1 days
Thursday	2 days

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

Selected survey types:

Manual count	3 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	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

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:

E(f)	3 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 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

20,001 to 25,000	1 days
25,001 to 50,000	2 days

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

Population within 5 miles:

250,001 to 500,000	3 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	1 days

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

Travel Plan:

No	3 days

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

PTAL Rating:

No PTAL Present	2 days
1b Very poor	1 days

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

LIST OF SITES relevant to selection parameters

1	DS-04-D-02	NURSERY		DERBYSHIRE
	MAXWELL AVENUE			
	DERBY			
	DARLEY ABBEY			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:		415 sqm	
	Survey date: THURSDAY		*12/07/18*	*Survey Type: MANUAL*
2	LE-04-D-01	NURSERY		LEICESTERSHIRE
	WIGSTON ROAD			
	LEICESTER			
	OADBY			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:		375 sqm	
	Survey date: THURSDAY		*30/10/14*	*Survey Type: MANUAL*
3	RB-04-D-02	NURSERY		REDBRIDGE
	RAY LODGE ROAD			
	WOODFORD GREEN			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:		666 sqm	
	Survey date: WEDNESDAY		*22/11/17*	*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/D - NURSERY
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	485	2.060	3	485	1.099	3	485	3.159
08:00 - 09:00	3	485	3.846	3	485	2.473	3	485	6.319
09:00 - 10:00	3	485	1.854	3	485	1.580	3	485	3.434
10:00 - 11:00	3	485	0.549	3	485	0.343	3	485	0.892
11:00 - 12:00	3	485	0.687	3	485	0.481	3	485	1.168
12:00 - 13:00	3	485	2.129	3	485	1.923	3	485	4.052
13:00 - 14:00	3	485	1.168	3	485	1.442	3	485	2.610
14:00 - 15:00	3	485	1.305	3	485	0.824	3	485	2.129
15:00 - 16:00	3	485	1.099	3	485	2.404	3	485	3.503
16:00 - 17:00	3	485	1.236	3	485	1.992	3	485	3.228
17:00 - 18:00	3	485	0.893	3	485	2.129	3	485	3.022
18:00 - 19:00	3	485	0.000	3	485	0.206	3	485	0.206
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			16.826			16.896			33.722

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:	375 - 666 (units: sqm)
Survey date date range:	01/01/14 - 19/11/21
Number of weekdays (Monday-Friday):	3
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-656801-220527-0515

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
	HF	HERTFORDSHIRE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 20 to 91 (units:)
Range Selected by User: 6 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: 01/01/13 to 30/06/21

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

Selected survey days:

Tuesday	2 days
Wednesday	2 days
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	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
Built-Up Zone	2

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

Secondary Filtering selection:

Use Class:

C3	5 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

20,001 to 25,000	2 days
25,001 to 50,000	3 days

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

Population within 5 miles:

250,001 to 500,000	5 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	2 days

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

Travel Plan:

Yes	2 days
No	3 days

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

PTAL Rating:

No PTAL Present	5 days

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

LIST OF SITES relevant to selection parameters

1 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*

2 DS-03-C-03 BLOCKS OF FLATS DERBYSHIRE
CAESAR STREET
DERBY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

3 EB-03-C-01 BLOCKS OF FLATS CITY OF EDINBURGH
MYRESIDE ROAD
EDINBURGH
CRAIGLOCKHART
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 32
Survey date: TUESDAY *26/05/15* *Survey Type: MANUAL*

4 HC-03-C-01 BLOCKS OF FLATS HAMPSHIRE
CROSS STREET
PORTSMOUTH

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 90
Survey date: TUESDAY *05/06/18* *Survey Type: MANUAL*

5 HF-03-C-03 BLOCK OF FLATS HERTFORDSHIRE
SHENLEY ROAD
BOREHAMWOOD

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 91
Survey date: THURSDAY *14/11/19* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
EX-03-C-01	Density not comparable
EX-03-C-02	Location not comparable

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	53	0.027	5	53	0.110	5	53	0.137
08:00 - 09:00	5	53	0.023	5	53	0.065	5	53	0.088
09:00 - 10:00	5	53	0.038	5	53	0.042	5	53	0.080
10:00 - 11:00	5	53	0.061	5	53	0.053	5	53	0.114
11:00 - 12:00	5	53	0.030	5	53	0.038	5	53	0.068
12:00 - 13:00	5	53	0.057	5	53	0.057	5	53	0.114
13:00 - 14:00	5	53	0.061	5	53	0.038	5	53	0.099
14:00 - 15:00	5	53	0.049	5	53	0.049	5	53	0.098
15:00 - 16:00	5	53	0.049	5	53	0.034	5	53	0.083
16:00 - 17:00	5	53	0.072	5	53	0.080	5	53	0.152
17:00 - 18:00	5	53	0.137	5	53	0.106	5	53	0.243
18:00 - 19:00	5	53	0.095	5	53	0.080	5	53	0.175
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.699			0.752			1.451

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.54

	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	5	53	0.091	5	53	0.357	5	53	0.448
08:00 - 09:00	5	53	0.068	5	53	0.376	5	53	0.444
09:00 - 10:00	5	53	0.103	5	53	0.144	5	53	0.247
10:00 - 11:00	5	53	0.114	5	53	0.122	5	53	0.236
11:00 - 12:00	5	53	0.110	5	53	0.118	5	53	0.228
12:00 - 13:00	5	53	0.183	5	53	0.232	5	53	0.415
13:00 - 14:00	5	53	0.163	5	53	0.133	5	53	0.296
14:00 - 15:00	5	53	0.129	5	53	0.125	5	53	0.254
15:00 - 16:00	5	53	0.163	5	53	0.106	5	53	0.269
16:00 - 17:00	5	53	0.278	5	53	0.148	5	53	0.426
17:00 - 18:00	5	53	0.449	5	53	0.221	5	53	0.670
18:00 - 19:00	5	53	0.300	5	53	0.202	5	53	0.502
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.151			2.284			4.435

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

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

Calculation Reference: AUDIT-656801-220426-0424

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
	HF	HERTFORDSHIRE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 20 to 91 (units:)
Range Selected by User: 6 to 493 (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: 01/01/14 to 15/10/21

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

Selected survey days:

Tuesday	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	3
Suburban Area (PPS6 Out of Centre)	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	4
Built-Up Zone	2

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

Secondary Filtering selection:

Use Class:

C3	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 500m Range:

All Surveys Included

Population within 1 mile:

20,001 to 25,000	2 days
25,001 to 50,000	4 days

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

Population within 5 miles:

250,001 to 500,000	6 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	2 days

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

Travel Plan:

Yes	2 days
No	4 days

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

PTAL Rating:

No PTAL Present	6 days

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

LIST OF SITES relevant to selection parameters

1	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*
2	DS-03-C-03	BLOCKS OF FLATS		DERBYSHIRE
	CAESAR STREET			
	DERBY			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		30	
	Survey date: WEDNESDAY		*25/09/19*	*Survey Type: MANUAL*
3	EB-03-C-01	BLOCKS OF FLATS		CITY OF EDINBURGH
	MYRESIDE ROAD			
	EDINBURGH			
	CRAIGLOCKHART			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		32	
	Survey date: TUESDAY		*26/05/15*	*Survey Type: MANUAL*
4	HC-03-C-01	BLOCKS OF FLATS		HAMPSHIRE
	CROSS STREET			
	PORTSMOUTH			
	Edge of Town Centre			
	Built-Up Zone			
	Total No of Dwellings:		90	
	Survey date: TUESDAY		*05/06/18*	*Survey Type: MANUAL*
5	HF-03-C-03	BLOCK OF FLATS		HERTFORDSHIRE
	SHENLEY ROAD			
	BOREHAMWOOD			
	Edge of Town Centre			
	Built-Up Zone			
	Total No of Dwellings:		91	
	Survey date: THURSDAY		*14/11/19*	*Survey Type: MANUAL*
6	WM-03-C-04	BLOCKS OF FLATS		WEST MIDLANDS
	GILLQUART WAY			
	COVENTRY			
	PARKSIDE			
	Edge of Town Centre			
	Residential Zone			
	Total No of Dwellings:		55	
	Survey date: FRIDAY		*11/11/16*	*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
TOTAL 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	53	0.041	6	53	0.113	6	53	0.154
08:00 - 09:00	6	53	0.019	6	53	0.160	6	53	0.179
09:00 - 10:00	6	53	0.047	6	53	0.063	6	53	0.110
10:00 - 11:00	6	53	0.038	6	53	0.044	6	53	0.082
11:00 - 12:00	6	53	0.047	6	53	0.066	6	53	0.113
12:00 - 13:00	6	53	0.079	6	53	0.088	6	53	0.167
13:00 - 14:00	6	53	0.060	6	53	0.057	6	53	0.117
14:00 - 15:00	6	53	0.060	6	53	0.047	6	53	0.107
15:00 - 16:00	6	53	0.063	6	53	0.044	6	53	0.107
16:00 - 17:00	6	53	0.113	6	53	0.063	6	53	0.176
17:00 - 18:00	6	53	0.135	6	53	0.075	6	53	0.210
18:00 - 19:00	6	53	0.132	6	53	0.069	6	53	0.201
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.834			0.889			1.723

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.

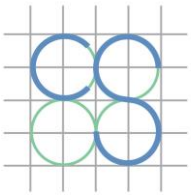
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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 - 91 (units:)
Survey date date range:	01/01/14 - 15/10/21
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.

Appendix C: Traffic Matrices



CS CONSULTING

GROUP

Peak Hour Traffic Flow Matrices (Passenger Car Units)

2022 AM Peak (08:30-09:30) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	5	99	12	**116**
Blessington Road (E)	30	0	22	20	**72**
Belgard Square E (S)	311	4	0	22	**337**
Blessington Road (W)	23	26	8	0	**57**
TOTALS	**364**	**35**	**129**	**54**	**583**

2022 PM Peak (15:45-16:45) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	8	106	24	**138**
Blessington Road (E)	21	0	25	36	**82**
Belgard Square E (S)	285	4	0	16	**305**
Blessington Road (W)	78	76	28	0	**182**
TOTALS	**383**	**88**	**159**	**76**	**706**

2022 AM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	5	99	12	**116**
Blessington Road (E)	30	0	22	20	**72**
Belgard Square E (S)	311	4	0	22	**337**
Blessington Road (W)	23	26	8	0	**57**
TOTALS	**364**	**35**	**129**	**54**	**582**

2022 PM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	8	106	24	**138**
Blessington Road (E)	21	0	25	36	**82**
Belgard Square E (S)	285	4	0	16	**305**
Blessington Road (W)	78	76	28	0	**182**
TOTALS	**384**	**88**	**159**	**76**	**707**

2025 AM Peak **Other committed development flows**

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	0	6	1	**7**
Blessington Road (E)	0	0	0	0	**0**
Belgard Square E (S)	2	0	0	0	**2**
Blessington Road (W)	0	1	0	0	**1**
TOTALS	**2**	**1**	**6**	**1**	**10**

2025 PM Peak **Other committed development flows**

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	1	5	1	**7**
Blessington Road (E)	2	0	2	3	**6**
Belgard Square E (S)	1	0	0	0	**2**
Blessington Road (W)	0	2	0	0	**2**
TOTALS	**4**	**3**	**7**	**4**	**17**

2025 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	6	110	13	**129**
Blessington Road (E)	32	0	23	21	**76**
Belgard Square E (S)	328	4	0	23	**355**
Blessington Road (W)	24	28	8	0	**60**
TOTALS	**384**	**38**	**141**	**57**	**620**

2025 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	9	117	26	**152**
Blessington Road (E)	23	0	28	40	**91**
Belgard Square E (S)	300	4	0	17	**321**
Blessington Road (W)	82	82	29	0	**193**
TOTALS	**405**	**95**	**174**	**83**	**757**

2025 AM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	0	1	0	**1**
Blessington Road (E)	0	0	3	0	**3**
Belgard Square E (S)	9	23	0	0	**32**
Blessington Road (W)	0	0	0	0	**0**
TOTALS	**9**	**23**	**4**	**0**	**36**

2025 PM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	0	4	0	**4**
Blessington Road (E)	0	0	20	0	**20**
Belgard Square E (S)	5	13	0	0	**18**
Blessington Road (W)	0	0	0	0	**0**
TOTALS	**5**	**13**	**24**	**0**	**42**

2025 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	6	111	13	**130**
Blessington Road (E)	32	0	26	21	**79**
Belgard Square E (S)	337	27	0	23	**387**
Blessington Road (W)	24	28	8	0	**60**
TOTALS	**393**	**61**	**145**	**57**	**656**

2025 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	9	121	26	**156**
Blessington Road (E)	23	0	48	40	**111**
Belgard Square E (S)	305	17	0	17	**339**
Blessington Road (W)	82	82	29	0	**193**
TOTALS	**410**	**108**	**198**	**83**	**799**

2030 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	6	119	14	**139**
Blessington Road (E)	34	0	25	23	**82**
Belgard Square E (S)	355	5	0	25	**385**
Blessington Road (W)	26	31	9	0	**66**
TOTALS	**415**	**42**	**153**	**62**	**672**

2030 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	10	126	29	**165**
Blessington Road (E)	25	0	30	44	**99**
Belgard Square E (S)	325	5	0	19	**349**
Blessington Road (W)	89	88	32	0	**209**
TOTALS	**439**	**103**	**188**	**92**	**822**

2030 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	6	120	14	**140**
Blessington Road (E)	34	0	28	23	**85**
Belgard Square E (S)	364	28	0	25	**417**
Blessington Road (W)	26	31	9	0	**66**
TOTALS	**424**	**65**	**157**	**62**	**708**

2030 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	10	130	29	**169**
Blessington Road (E)	25	0	50	44	**119**
Belgard Square E (S)	330	18	0	19	**367**
Blessington Road (W)	89	88	32	0	**209**
TOTALS	**444**	**116**	**212**	**92**	**864**

2040 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	6	125	15	**146**
Blessington Road (E)	36	0	26	24	**86**
Belgard Square E (S)	374	5	0	26	**405**
Blessington Road (W)	28	32	10	0	**70**
TOTALS	**438**	**43**	**161**	**65**	**707**

2040 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	Blessington Road (E)	Belgard Square E (S)	Blessington Road (W)	TOTALS
Belgard Square E (N)	0	10	132	30	**172**
Blessington Road (E)	26	0	32	46	**104**
Belgard Square E (S)	342	5	0	20	**367**
Blessington Road (W)	94	93	34	0	**221**
TOTALS	**462**	**108**	**198**	**96**	**864**

Peak Hour Traffic Flow Matrices (Passenger Car Units)

2022 AM Peak (08:30-09:30) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	44	321	**365**
The Square Parking lan	18	0	16	**34**
Belgard Road E (N)	86	43	0	**129**
TOTALS	**104**	**87**	**337**	**528**

2022 PM Peak (15:45-16:45) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	50	227	**277**
The Square Parking lan	68	0	83	**150**
Belgard Road E (N)	115	45	0	**160**
TOTALS	**183**	**95**	**310**	**587**

2022 AM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	44	321	**365**
The Square Parking lan	18	0	16	**34**
Belgard Road E (N)	86	43	0	**129**
TOTALS	**104**	**87**	**337**	**528**

2022 PM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	50	227	**277**
The Square Parking lan	68	0	83	**151**
Belgard Road E (N)	115	45	0	**160**
TOTALS	**183**	**95**	**310**	**588**

2025 AM Peak **Other committed development flows**

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	0	2	**2**
The Square Parking lan	0	0	0	**0**
Belgard Road E (N)	4	2	0	**6**
TOTALS	**4**	**2**	**2**	**8**

2025 PM Peak **Other committed development flows**

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	0	1	**1**
The Square Parking lan	0	0	0	**0**
Belgard Road E (N)	5	2	0	**7**
TOTALS	**5**	**2**	**2**	**9**

2025 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	46	339	**385**
The Square Parking lan	18	0	17	**35**
Belgard Road E (N)	94	47	0	**141**
TOTALS	**112**	**93**	**356**	**561**

2025 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	52	240	**292**
The Square Parking lan	71	0	87	**158**
Belgard Road E (N)	126	49	0	**175**
TOTALS	**197**	**101**	**327**	**625**

2025 AM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	0	32	**32**
The Square Parking lan	0	0	0	**0**
Belgard Road E (N)	4	0	0	**4**
TOTALS	**4**	**0**	**32**	**36**

2025 PM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	0	20	**20**
The Square Parking lan	0	0	0	**0**
Belgard Road E (N)	24	0	0	**24**
TOTALS	**24**	**0**	**20**	**44**

2025 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	46	371	**417**
The Square Parking lan	18	0	17	**35**
Belgard Road E (N)	98	47	0	**145**
TOTALS	**116**	**93**	**388**	**597**

2025 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	52	260	**312**
The Square Parking lan	71	0	87	**158**
Belgard Road E (N)	150	49	0	**199**
TOTALS	**221**	**101**	**347**	**669**

2030 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	50	367	**417**
The Square Parking lan	20	0	18	**38**
Belgard Road E (N)	102	51	0	**153**
TOTALS	**122**	**101**	**385**	**608**

2030 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	56	260	**316**
The Square Parking lan	77	0	94	**171**
Belgard Road E (N)	136	53	0	**189**
TOTALS	**213**	**109**	**354**	**676**

2030 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	50	399	**449**
The Square Parking lan	20	0	18	**38**
Belgard Road E (N)	106	51	0	**157**
TOTALS	**126**	**101**	**417**	**644**

2030 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	56	280	**336**
The Square Parking lan	77	0	94	**171**
Belgard Road E (N)	160	53	0	**213**
TOTALS	**237**	**109**	**374**	**720**

2040 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	53	386	**439**
The Square Parking lan	21	0	19	**40**
Belgard Road E (N)	107	54	0	**161**
TOTALS	**128**	**107**	**405**	**640**

2040 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	59	273	**332**
The Square Parking lan	81	0	99	**180**
Belgard Road E (N)	143	56	0	**199**
TOTALS	**224**	**115**	**372**	**711**

2040 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	53	418	**471**
The Square Parking lan	21	0	19	**40**
Belgard Road E (N)	111	54	0	**165**
TOTALS	**132**	**107**	**437**	**676**

2040 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Road E (S)	The Square Parking lan	Belgard Road E (N)	TOTALS
Belgard Road E (S)	0	59	293	**352**
The Square Parking lan	81	0	99	**180**
Belgard Road E (N)	167	56	0	**223**
TOTALS	**248**	**115**	**392**	**755**

Peak Hour Traffic Flow Matrices (Passenger Car Units)

2022 AM Peak (08:30-09:30) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	86	**86**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	321	0	0	**321**
TOTALS	**321**	**0**	**86**	**407**

2022 PM Peak (15:45-16:45) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	115	**115**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	227	0	0	**227**
TOTALS	**227**	**0**	**115**	**342**

2022 AM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	86	**86**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	321	0	0	**321**
TOTALS	**321**	**0**	**86**	**407**

2022 PM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	115	**115**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	227	0	0	**227**
TOTALS	**227**	**0**	**115**	**342**

2025 AM Peak **Other committed development flows**

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)			2	**2**
SD Basement Access				**0**
Belgard Square E (S)	4			**4**
TOTALS	**4**	**0**	**2**	**6**

2025 PM Peak **Other committed development flows**

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)			1	**1**
SD Basement Access				**0**
Belgard Square E (S)	5			**5**
TOTALS	**5**	**0**	**1**	**6**

2025 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	92	**92**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	341	0	0	**341**
TOTALS	**341**	**0**	**92**	**433**

2025 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	122	**122**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	243	0	0	**243**
TOTALS	**243**	**0**	**122**	**365**

2025 AM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	2	1	**3**
SD Basement Access	27	0	15	**42**
Belgard Square E (S)	7	4	0	**12**
TOTALS	**34**	**6**	**16**	**56**

2025 PM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	21	3	**24**
SD Basement Access	11	0	12	**23**
Belgard Square E (S)	4	29	0	**33**
TOTALS	**15**	**50**	**15**	**80**

2025 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	2	93	**95**
SD Basement Access	27	0	15	**42**
Belgard Square E (S)	348	4	0	**353**
TOTALS	**375**	**6**	**108**	**489**

2025 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	21	125	**146**
SD Basement Access	11	0	12	**23**
Belgard Square E (S)	247	29	0	**276**
TOTALS	**258**	**50**	**137**	**445**

2030 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	99	**99**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	369	0	0	**369**
TOTALS	**369**	**0**	**99**	**468**

2030 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	132	**132**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	263	0	0	**263**
TOTALS	**263**	**0**	**132**	**395**

2030 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	2	100	**102**
SD Basement Access	27	0	15	**42**
Belgard Square E (S)	376	4	0	**381**
TOTALS	**403**	**6**	**115**	**524**

2030 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	21	135	**156**
SD Basement Access	11	0	12	**23**
Belgard Square E (S)	267	29	0	**296**
TOTALS	**278**	**50**	**147**	**475**

2040 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	105	**105**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	388	0	0	**388**
TOTALS	**388**	**0**	**105**	**493**

2040 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	139	**139**
SD Basement Access	0	0	0	**0**
Belgard Square E (S)	277	0	0	**277**
TOTALS	**277**	**0**	**139**	**416**

2040 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	2	106	**108**
SD Basement Access	27	0	15	**42**
Belgard Square E (S)	395	4	0	**400**
TOTALS	**422**	**6**	**121**	**549**

2040 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Basement Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	21	142	**163**
SD Basement Access	11	0	12	**23**
Belgard Square E (S)	281	29	0	**310**
TOTALS	**292**	**50**	**154**	**496**

Peak Hour Traffic Flow Matrices (Passenger Car Units)

2022 AM Peak (08:30-09:30) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	86	**86**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	321	0	0	**321**
TOTALS	**321**	**0**	**86**	**407**

2022 PM Peak (15:45-16:45) **SURVEYED TRAFFIC FLOWS**

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	115	**115**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	227	0	0	**227**
TOTALS	**227**	**0**	**115**	**342**

2022 AM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	86	**86**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	321	0	0	**321**
TOTALS	**321**	**0**	**86**	**407**

2022 PM Peak **BASELINE TRAFFIC FLOWS**
(surveyed flows + TII growth factor)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	115	**115**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	227	0	0	**227**
TOTALS	**227**	**0**	**115**	**342**

2025 AM Peak **Other committed development flows**

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)			2	**2**
SD Surface Access				**0**
Belgard Square E (S)	4			**4**
TOTALS	**4**	**0**	**2**	**6**

2025 PM Peak **Other committed development flows**

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)			1	**1**
SD Surface Access				**0**
Belgard Square E (S)	5			**5**
TOTALS	**5**	**0**	**1**	**6**

2025 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	92	**92**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	341	0	0	**341**
TOTALS	**341**	**0**	**92**	**433**

2025 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	122	**122**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	243	0	0	**243**
TOTALS	**243**	**0**	**122**	**365**

2025 AM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	2	**4**
SD Surface Access	2	0	1	**3**
Belgard Square E (S)	27	7	0	**34**
TOTALS	**29**	**10**	**3**	**42**

2025 PM Peak **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	21	**24**
SD Surface Access	3	0	3	**6**
Belgard Square E (S)	11	4	0	**15**
TOTALS	**14**	**7**	**24**	**45**

2025 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	94	**96**
SD Surface Access	2	0	1	**3**
Belgard Square E (S)	368	7	0	**375**
TOTALS	**370**	**10**	**95**	**475**

2025 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	143	**146**
SD Surface Access	3	0	3	**6**
Belgard Square E (S)	254	4	0	**258**
TOTALS	**257**	**7**	**146**	**410**

2030 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	99	**99**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	369	0	0	**369**
TOTALS	**369**	**0**	**99**	**468**

2030 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	132	**132**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	263	0	0	**263**
TOTALS	**263**	**0**	**132**	**395**

2030 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	101	**103**
SD Surface Access	2	0	1	**3**
Belgard Square E (S)	396	7	0	**403**
TOTALS	**398**	**10**	**102**	**510**

2030 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	153	**156**
SD Surface Access	3	0	3	**6**
Belgard Square E (S)	274	4	0	**278**
TOTALS	**277**	**7**	**156**	**440**

2040 AM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	105	**105**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	388	0	0	**388**
TOTALS	**388**	**0**	**105**	**493**

2040 PM Peak **WITHOUT SUBJECT DEVELOPMENT**
(surveyed flows + TII growth factor + committed development)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	0	139	**139**
SD Surface Access	0	0	0	**0**
Belgard Square E (S)	277	0	0	**277**
TOTALS	**277**	**0**	**139**	**416**

2040 AM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	107	**109**
SD Surface Access	2	0	1	**3**
Belgard Square E (S)	415	7	0	**422**
TOTALS	**417**	**10**	**108**	**535**

2040 PM Peak **WITH SUBJECT DEVELOPMENT IN PLACE**
(surveyed + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Square E (N)	SD Surface Access	Belgard Square E (S)	TOTALS
Belgard Square E (N)	0	3	160	**163**
SD Surface Access	3	0	3	**6**
Belgard Square E (S)	288	4	0	**292**
TOTALS	**291**	**7**	**163**	**461**

Junction 1 - Peak Hour Traffic Flow Matrices (Passenger Car Units) - With BusConnects Changes to Junction 4

2022 AM Peak (08:45-09:45) — **BASELINE TRAFFIC FLOWS**

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	6	92	14	**112**
Old Blessington Rd (East)	33	0	28	25	**86**
Belgard Sq East (South)	264	5	0	21	**291**
Old Blessington Rd (West)	21	23	8	0	**53**
TOTALS	**319**	**35**	**128**	**61**	**542**

2022 PM Peak (16:00-17:00) — **BASELINE TRAFFIC FLOWS**

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	9	101	20	**130**
Old Blessington Rd (East)	25	0	27	31	**83**
Belgard Sq East (South)	286	2	0	14	**302**
Old Blessington Rd (West)	78	81	30	0	**189**
TOTALS	**388**	**93**	**158**	**65**	**704**

2022 AM Peak — **RESTRUCTURED TRAFFIC FLOWS** (baseline flows + BusConnects reallocation)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	54	0	0	**54**
Old Blessington Rd (East)	54	0	121	32	**207**
Belgard Sq East (South)	0	315	0	22	**337**
Old Blessington Rd (West)	0	49	8	0	**57**
TOTALS	**54**	**418**	**129**	**54**	**656**

2022 PM Peak — **RESTRUCTURED TRAFFIC FLOWS** (baseline flows + BusConnects reallocation)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	54	0	0	**54**
Old Blessington Rd (East)	54	0	131	60	**245**
Belgard Sq East (South)	0	289	0	16	**305**
Old Blessington Rd (West)	0	154	28	0	**182**
TOTALS	**54**	**497**	**159**	**76**	**786**

2025 AM Peak — **Other committed development flows**

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	0	0	0	**0**
Old Blessington Rd (East)	2	0	8	3	**13**
Belgard Sq East (South)	0	2	0	0	**2**
Old Blessington Rd (West)	0	1	0	0	**1**
TOTALS	**2**	**4**	**8**	**3**	**17**

2025 PM Peak — **Other committed development flows**

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	0	0	0	**0**
Old Blessington Rd (East)	4	0	10	9	**24**
Belgard Sq East (South)	0	1	0	0	**1**
Old Blessington Rd (West)	0	3	0	0	**3**
TOTALS	**4**	**4**	**10**	**9**	**28**

2025 AM Peak — **WITHOUT SUBJECT DEVELOPMENT** (restructured flows + TII growth factor + committed development)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	57	0	0	**57**
Old Blessington Rd (East)	59	0	135	37	**231**
Belgard Sq East (South)	0	333	0	23	**356**
Old Blessington Rd (West)	0	53	8	0	**61**
TOTALS	**59**	**443**	**143**	**60**	**705**

2025 PM Peak — **WITHOUT SUBJECT DEVELOPMENT** (restructured flows + TII growth factor + committed development)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	57	0	0	**57**
Old Blessington Rd (East)	61	0	148	72	**281**
Belgard Sq East (South)	0	304	0	17	**321**
Old Blessington Rd (West)	0	164	29	0	**193**
TOTALS	**61**	**525**	**177**	**89**	**852**

2025 AM Peak — **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	0	0	0	**0**
Old Blessington Rd (East)	0	0	4	0	**4**
Belgard Sq East (South)	0	32	0	0	**32**
Old Blessington Rd (West)	0	0	0	0	**0**
TOTALS	**0**	**32**	**4**	**0**	**36**

2025 PM Peak — **SUBJECT DEVELOPMENT FLOWS**

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	0	0	0	**0**
Old Blessington Rd (East)	0	0	24	0	**24**
Belgard Sq East (South)	0	18	0	0	**18**
Old Blessington Rd (West)	0	0	0	0	**0**
TOTALS	**0**	**18**	**24**	**0**	**42**

2025 AM Peak — **WITH SUBJECT DEVELOPMENT IN PLACE** (restructured flows + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	57	0	0	**57**
Old Blessington Rd (East)	59	0	139	37	**235**
Belgard Sq East (South)	0	365	0	23	**388**
Old Blessington Rd (West)	0	53	8	0	**61**
TOTALS	**59**	**475**	**147**	**60**	**741**

2025 PM Peak — **WITH SUBJECT DEVELOPMENT IN PLACE** (restructured flows + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	57	0	0	**57**
Old Blessington Rd (East)	61	0	172	72	**305**
Belgard Sq East (South)	0	322	0	17	**339**
Old Blessington Rd (West)	0	164	29	0	**193**
TOTALS	**61**	**543**	**201**	**89**	**894**

2030 AM Peak — **WITHOUT SUBJECT DEVELOPMENT** (restructured flows + TII growth factor + committed development)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	62	0	0	**62**
Old Blessington Rd (East)	63	0	146	39	**248**
Belgard Sq East (South)	0	360	0	25	**385**
Old Blessington Rd (West)	0	57	9	0	**66**
TOTALS	**63**	**479**	**155**	**64**	**761**

2030 PM Peak — **WITHOUT SUBJECT DEVELOPMENT** (restructured flows + TII growth factor + committed development)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	62	0	0	**62**
Old Blessington Rd (East)	66	0	159	77	**302**
Belgard Sq East (South)	0	330	0	19	**349**
Old Blessington Rd (West)	0	178	32	0	**210**
TOTALS	**66**	**570**	**191**	**96**	**923**

2030 AM Peak — **WITH SUBJECT DEVELOPMENT IN PLACE** (restructured flows + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	62	0	0	**62**
Old Blessington Rd (East)	63	0	150	39	**252**
Belgard Sq East (South)	0	392	0	25	**417**
Old Blessington Rd (West)	0	57	9	0	**66**
TOTALS	**63**	**511**	**159**	**64**	**797**

2030 PM Peak — **WITH SUBJECT DEVELOPMENT IN PLACE** (restructured flows + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	62	0	0	**62**
Old Blessington Rd (East)	66	0	183	77	**326**
Belgard Sq East (South)	0	348	0	19	**367**
Old Blessington Rd (West)	0	178	32	0	**210**
TOTALS	**66**	**588**	**215**	**96**	**965**

2040 AM Peak — **WITHOUT SUBJECT DEVELOPMENT** (restructured flows + TII growth factor + committed development)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	65	0	0	**65**
Old Blessington Rd (East)	67	0	153	41	**261**
Belgard Sq East (South)	0	379	0	26	**405**
Old Blessington Rd (West)	0	60	10	0	**70**
TOTALS	**67**	**504**	**163**	**67**	**801**

2040 PM Peak — **WITHOUT SUBJECT DEVELOPMENT** (restructured flows + TII growth factor + committed development)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	65	0	0	**65**
Old Blessington Rd (East)	69	0	167	80	**316**
Belgard Sq East (South)	0	347	0	20	**367**
Old Blessington Rd (West)	0	187	34	0	**221**
TOTALS	**69**	**599**	**201**	**100**	**969**

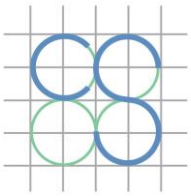
2040 AM Peak — **WITH SUBJECT DEVELOPMENT IN PLACE** (restructured flows + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	65	0	0	**65**
Old Blessington Rd (East)	67	0	157	41	**265**
Belgard Sq East (South)	0	411	0	26	**437**
Old Blessington Rd (West)	0	60	10	0	**70**
TOTALS	**67**	**536**	**167**	**67**	**837**

2040 PM Peak — **WITH SUBJECT DEVELOPMENT IN PLACE** (restructured flows + TII growth factor + committed dev. + subject dev.)

From \ To	Belgard Sq East (North)	Old Blessington Rd	Belgard Sq East (South)	Old Blessington Rd	TOTALS
Belgard Sq East (North)	0	65	0	0	**65**
Old Blessington Rd (East)	69	0	191	80	**340**
Belgard Sq East (South)	0	365	0	20	**385**
Old Blessington Rd (West)	0	187	34	0	**221**
TOTALS	**69**	**617**	**225**	**100**	**1011**

Appendix D: TRANSYT Results



CS CONSULTING

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TRANSYT 16

Version: 16.0.1.8473

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: Q003 BusConnects Scenario 20220527 FB.t16
Path: J:\Q_JOBS\Job-Q003\B_Documents\1.0_Civil\4_Reports\TTA\Modelling
Report generation date: 27/05/2022 15:35:54

Summary of network performance

	AM					PM				
	Set ID	Total delay (PCU-hr/hr)	Highest DOS	Number oversaturated	Within capacity	Set ID	Total delay (PCU-hr/hr)	Highest DOS	Number oversaturated	Within capacity
	Standard - 2022 Baseline									
Network	D1	7.17	67% (TS B/1)	0 (0%)	YES	D2	9.09	63% (TS C/1)	0 (0%)	YES
	Standard - 2025 No Dev									
Network	D3	7.96	71% (TS B/1)	0 (0%)	YES	D4	10.22	67% (TS C/1)	0 (0%)	YES
	Standard - 2025 With Dev									
Network	D5	8.80	77% (TS B/1)	0 (0%)	YES	D6	11.05	68% (TS A/1)	0 (0%)	YES
	Standard - 2030 No Dev									
Network	D7	9.03	76% (TS B/1)	0 (0%)	YES	D8	11.67	73% (TS C/1)	0 (0%)	YES
	Standard - 2030 With Dev									
Network	D9	10.14	83% (TS B/1)	0 (0%)	YES	D10	12.65	73% (TS C/1)	0 (0%)	YES
	Standard - 2040 No Dev									
Network	D11	9.95	80% (TS B/1)	0 (0%)	YES	D12	12.83	77% (TS C/1)	0 (0%)	YES
	Standard - 2040 With Dev									
Network	D13	11.40	87% (TS B/1)	0 (0%)	YES	D14	13.94	77% (TS C/1)	0 (0%)	YES

File summary

File description

File title	Belgard Square East
Location	Belgard Square
Site number	
UTCRegion	
Driving side	Left
Date	11/05/2022
Version	Existing Junction Layout
Status	
Identifier	
Client	
Jobnumber	Q003
Enumerator	FB
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display OD matrix distances	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber	c m
			✓			✓	✓	✓	✓	✓	✓	✓			

Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
€	kph	m	mpg	l/h	kg	PCU	PCU	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Average animation capture interval (s)	Use quick response	Do flow sampling	Uniform vehicle generation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	10000	10000	-1	3	60	✓			0	0	0.00

A1 - Standard
D1 - 2022 Baseline, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:43	27/05/2022 15:35:43	0.58	08:45	100	108.40	7.17	66.87	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2022 Baseline	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	121	32
	3	0	315	0	22
	4	0	49	8	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	54	0	0
	2	54	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	49
	3		4	3	C/1, Bx/1	Normal	8
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	315
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	121
	13		3	4	B/1, Cx/1	Normal	22
	15		2	4	A/1, Cx/1	Normal	32
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	27
	19		1	2	D/1, Ax/2	Normal	27
	20		2	1	A/2, Dx/1	Normal	54

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

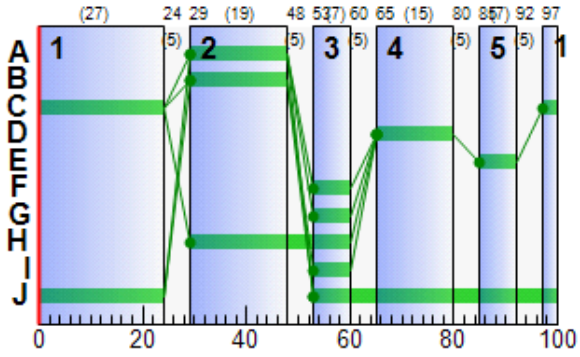
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

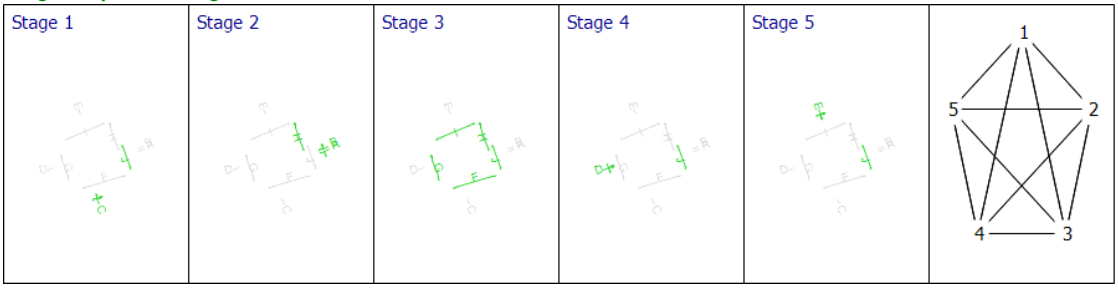
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	153	1800	19	0.00	43	112	47.86	38.66	89.37	3.85	3.
	2 B		1	1	B	54	1800	19	17.00	15	500	52.30	33.91	82.35	1.24	1.
Ax	1 NB	(untitled)				391	Unrestricted	100	14.00	0	Unrestricted	43.60	0.00	0.00	0.00	
	2 B					27	Unrestricted	100	83.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	337	1800	27	0.00	67	35	47.48	38.99	93.53	8.90	7.
Bx	1	(untitled)				129	Unrestricted	100	54.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	57	1800	15	13.00	20	355	46.49	38.00	86.35	1.39	1.
Cx	1	(untitled)				54	Unrestricted	100	61.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	54	1800	7	5.00	38	140	68.04	51.07	100.76	1.52	1.
Dx	1 NB	(untitled)				54	Unrestricted	100	72.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	222.04	13.30	16.70	5.05	0.84	83.70	6.28	0.00	89.99
Bus	44.55	4.24	10.50	1.15	0.12	18.10	0.31	0.00	18.41
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	266.59	17.54	15.20	6.20	0.97	101.81	6.59	0.00	108.40

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D2 - 2022 Baseline, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:43	27/05/2022 15:35:43	0.87	16:00	100	137.40	9.09	63.19	C/1	0	0	C/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2022 Baseline	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	131	60
	3	0	289	0	16
	4	0	154	28	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	54	0	0
	2	54	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	154
	3		4	3	C/1, Bx/1	Normal	28
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	289
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	131
	13		3	4	B/1, Cx/1	Normal	16
	15		2	4	A/1, Cx/1	Normal	60
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	27
	19		1	2	D/1, Ax/2	Normal	27
	20		2	1	A/2, Dx/1	Normal	54

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

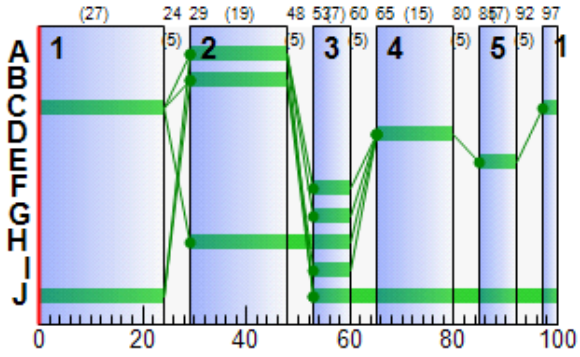
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

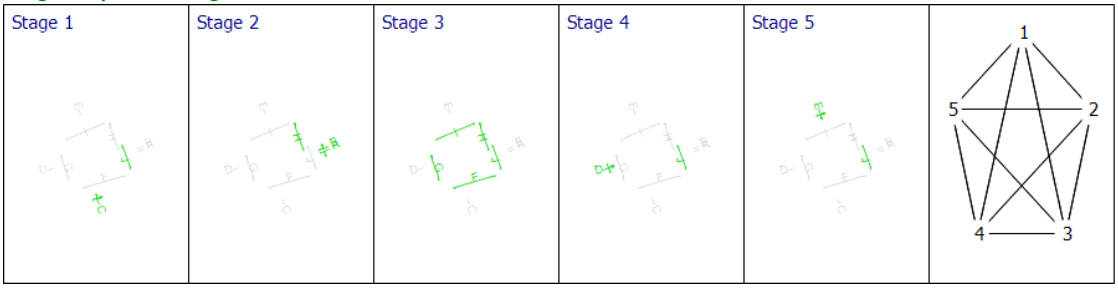
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	191	1800	19	0.00	53	70	50.60	41.41	93.23	5.02	4.
	2 B		1	1	B	54	1800	19	17.00	15	500	52.30	33.91	82.35	1.24	1.
Ax	1 NB	(untitled)				470	Unrestricted	100	9.00	0	Unrestricted	43.12	0.00	0.00	0.00	
	2 B					27	Unrestricted	100	83.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	305	1800	27	0.00	61	49	45.11	36.63	89.99	7.74	6.
Bx	1	(untitled)				159	Unrestricted	100	41.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	182	1800	15	0.00	63	42	58.25	49.76	101.93	5.23	4.
Cx	1	(untitled)				76	Unrestricted	100	64.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	54	1800	7	5.00	38	140	68.04	51.07	100.76	1.52	1.
Dx	1 NB	(untitled)				54	Unrestricted	100	72.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	275.17	16.99	16.20	6.53	1.29	110.98	8.00	0.00	118.98
Bus	44.55	4.24	10.50	1.15	0.12	18.10	0.31	0.00	18.41
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	319.72	21.23	15.06	7.68	1.41	129.08	8.31	0.00	137.40

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D3 - 2025 No Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:44	27/05/2022 15:35:44	0.39	08:45	100	120.28	7.96	70.63	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 No Dev	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	135	37
	3	0	333	0	23
	4	0	53	8	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	57	0	0
	2	57	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	53
	3		4	3	C/1, Bx/1	Normal	8
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	333
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	135
	13		3	4	B/1, Cx/1	Normal	23
	15		2	4	A/1, Cx/1	Normal	37
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	29
	19		1	2	D/1, Ax/2	Normal	29
	20		2	1	A/2, Dx/1	Normal	57

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

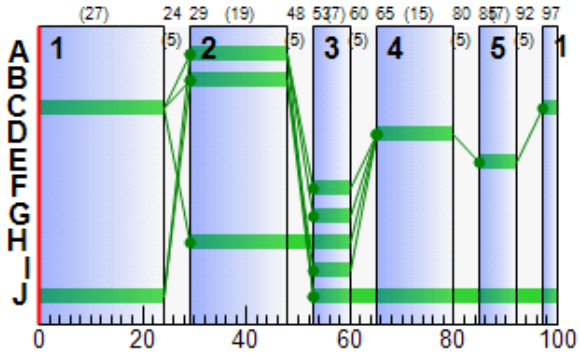
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

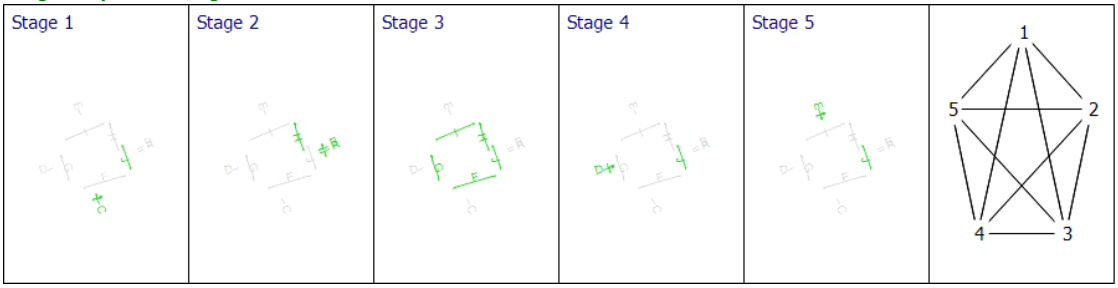
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	172	1800	19	0.00	48	88	49.13	39.93	91.20	4.42	4.
	2 B		1	1	B	57	1800	19	17.00	16	468	52.41	34.02	82.41	1.31	1.
Ax	1 NB	(untitled)				415	Unrestricted	100	12.00	0	Unrestricted	43.63	0.00	0.00	0.00	
	2 B					29	Unrestricted	100	82.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	356	1800	27	0.00	71	27	49.22	40.73	95.86	9.63	7.
Bx	1	(untitled)				143	Unrestricted	100	53.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	61	1800	15	0.00	21	325	46.69	38.20	86.49	1.49	1.
Cx	1	(untitled)				60	Unrestricted	100	58.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	58	1800	7	4.00	40	123	69.04	52.06	102.47	1.66	1.
Dx	1 NB	(untitled)				57	Unrestricted	100	71.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	239.02	14.55	16.43	5.51	1.08	93.48	6.91	0.00	100.39
Bus	47.43	4.54	10.45	1.23	0.15	19.56	0.33	0.00	19.89
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	286.46	19.09	15.01	6.73	1.23	113.04	7.24	0.00	120.28

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D4 - 2025 No Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:44	27/05/2022 15:35:44	0.64	16:00	100	154.40	10.22	67.01	C/1	0	0	C/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 No Dev	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	148	72
	3	0	304	0	17
	4	0	164	29	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	57	0	0
	2	57	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	164
	3		4	3	C/1, Bx/1	Normal	29
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	304
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	148
	13		3	4	B/1, Cx/1	Normal	17
	15		2	4	A/1, Cx/1	Normal	72
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	29
	19		1	2	D/1, Ax/2	Normal	29
	20		2	1	A/2, Dx/1	Normal	57

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

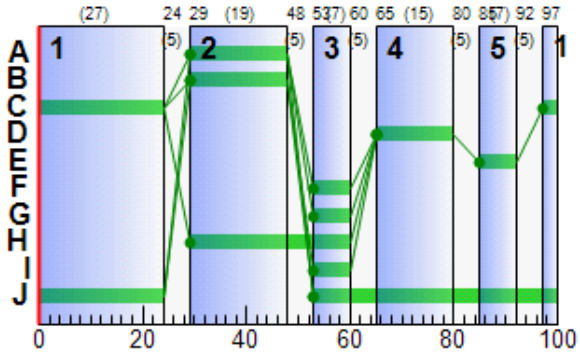
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

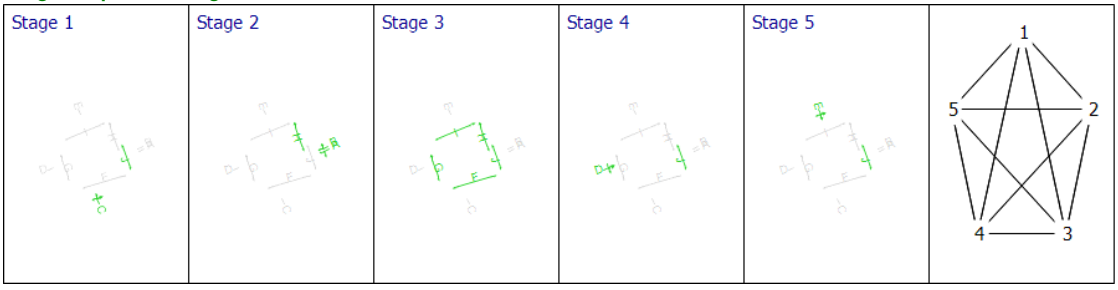
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	220	1800	19	0.00	61	47	53.39	44.20	96.95	6.03	5.
	2 B		1	1	B	57	1800	19	17.00	16	468	52.41	34.02	82.41	1.31	1.
Ax	1 NB	(untitled)				497	Unrestricted	100	9.00	0	Unrestricted	43.16	0.00	0.00	0.00	
	2 B					29	Unrestricted	100	82.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	321	1800	27	0.00	64	41	46.22	37.74	91.70	8.31	6.
Bx	1	(untitled)				177	Unrestricted	100	40.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	193	1800	15	0.00	67	34	60.36	51.87	104.20	5.70	5.
Cx	1	(untitled)				89	Unrestricted	100	59.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	58	1800	7	4.00	40	123	69.04	52.06	102.47	1.66	1.
Dx	1 NB	(untitled)				57	Unrestricted	100	71.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	297.81	18.77	15.86	7.16	1.69	125.62	8.89	0.00	134.51
Bus	47.43	4.54	10.45	1.23	0.15	19.56	0.33	0.00	19.89
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	345.24	23.31	14.81	8.39	1.84	145.18	9.22	0.00	154.40

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D5 - 2025 With Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:44	27/05/2022 15:35:44	0.89	08:45	100	132.84	8.80	76.98	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 With Dev	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	139	37
	3	0	365	0	23
	4	0	53	8	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	57	0	0
	2	57	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	53
	3		4	3	C/1, Bx/1	Normal	8
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	365
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	139
	13		3	4	B/1, Cx/1	Normal	23
	15		2	4	A/1, Cx/1	Normal	37
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	29
	19		1	2	D/1, Ax/2	Normal	29
	20		2	1	A/2, Dx/1	Normal	57

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

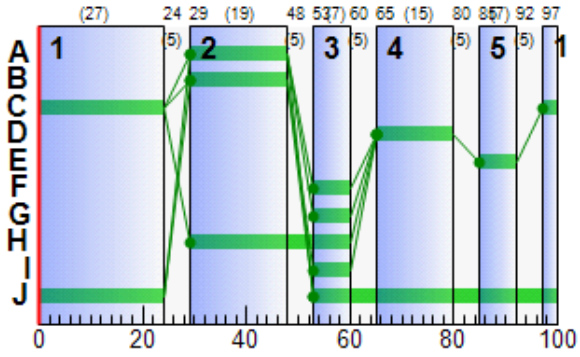
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

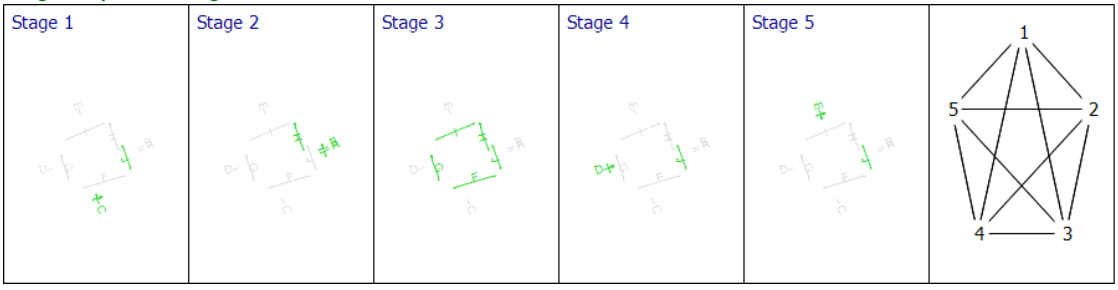
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	176	1800	19	0.00	49	84	49.42	40.22	91.47	4.53	4.
	2 B		1	1	B	57	1800	19	17.00	16	468	52.41	34.02	82.41	1.31	1.
Ax	1 NB	(untitled)				447	Unrestricted	100	11.00	0	Unrestricted	43.43	0.00	0.00	0.00	
	2 B					29	Unrestricted	100	82.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	388	1800	27	0.00	77	17	53.08	44.59	100.80	11.05	9.
Bx	1	(untitled)				147	Unrestricted	100	53.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	61	1800	15	0.00	21	325	46.69	38.20	86.49	1.49	1.
Cx	1	(untitled)				60	Unrestricted	100	57.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	58	1800	7	4.00	40	123	69.04	52.06	102.47	1.66	1.
Dx	1 NB	(untitled)				57	Unrestricted	100	71.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	253.73	15.88	15.98	5.91	1.50	105.36	7.58	0.00	112.94
Bus	47.43	4.54	10.45	1.23	0.15	19.56	0.33	0.00	19.89
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	301.17	20.42	14.75	7.14	1.65	124.92	7.92	0.00	132.84

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D6 - 2025 With Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:44	27/05/2022 15:35:45	1.12	16:00	100	166.85	11.05	67.78	A/1	0	0	A/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 With Dev	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	172	72
	3	0	322	0	17
	4	0	164	29	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	57	0	0
	2	57	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	164
	3		4	3	C/1, Bx/1	Normal	29
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	322
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	172
	13		3	4	B/1, Cx/1	Normal	17
	15		2	4	A/1, Cx/1	Normal	72
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	29
	19		1	2	D/1, Ax/2	Normal	29
	20		2	1	A/2, Dx/1	Normal	57

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

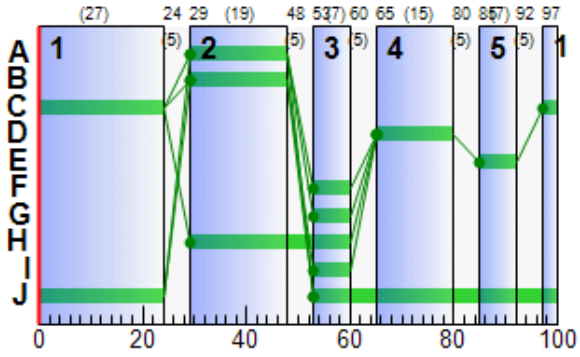
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

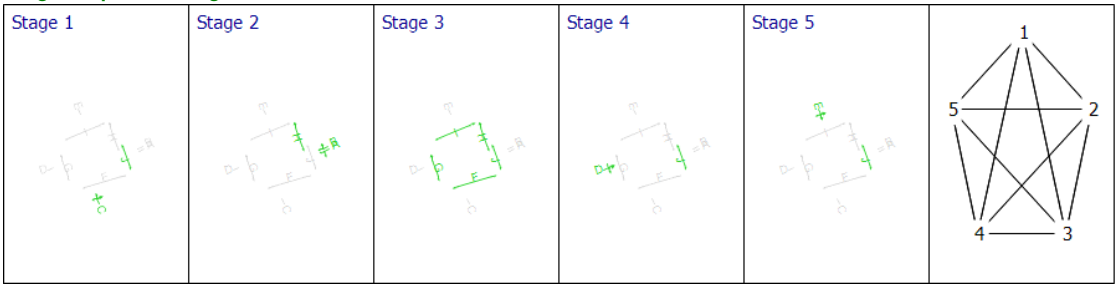
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	244	1800	19	0.00	68	33	56.50	47.30	100.68	6.93	6.
	2 B		1	1	B	57	1800	19	17.00	16	468	52.41	34.02	82.41	1.31	1.
Ax	1 NB	(untitled)				515	Unrestricted	100	8.00	0	Unrestricted	43.08	0.00	0.00	0.00	
	2 B					29	Unrestricted	100	82.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	339	1800	27	0.00	67	34	47.64	39.16	93.71	8.97	7.
Bx	1	(untitled)				201	Unrestricted	100	39.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	193	1800	15	0.00	67	34	60.36	51.87	104.20	5.70	5.
Cx	1	(untitled)				89	Unrestricted	100	58.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	58	1800	7	4.00	40	123	69.04	52.06	102.47	1.66	1.
Dx	1 NB	(untitled)				57	Unrestricted	100	71.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	314.63	20.16	15.61	7.64	2.04	137.37	9.58	0.00	146.96
Bus	47.43	4.54	10.45	1.23	0.15	19.56	0.33	0.00	19.89
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	362.07	24.70	14.66	8.86	2.19	156.93	9.92	0.00	166.85

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D7 - 2030 No Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:45	27/05/2022 15:35:45	0.40	08:45	100	136.24	9.03	76.39	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 No Dev	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	146	39
	3	0	360	0	25
	4	0	57	9	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	61	0	0
	2	61	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	57
	3		4	3	C/1, Bx/1	Normal	9
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	360
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	146
	13		3	4	B/1, Cx/1	Normal	25
	15		2	4	A/1, Cx/1	Normal	39
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	31
	19		1	2	D/1, Ax/2	Normal	31
	20		2	1	A/2, Dx/1	Normal	61

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

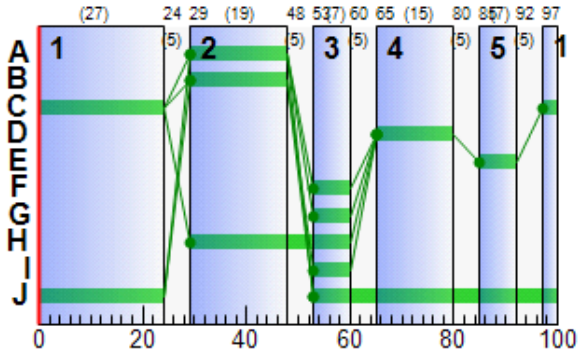
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

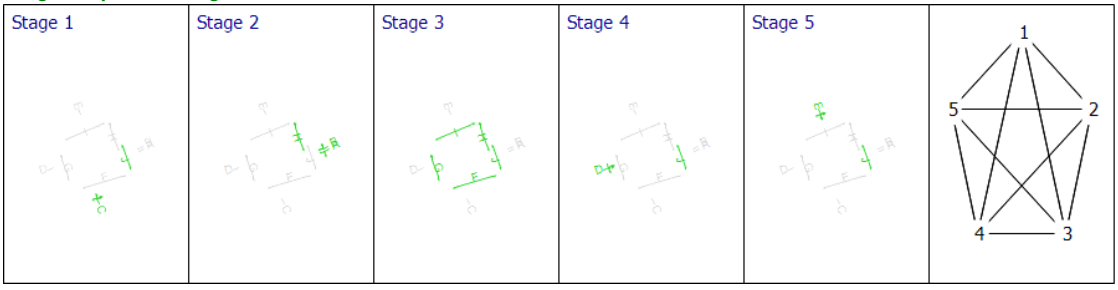
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	185	1800	19	0.00	51	75	50.11	40.91	92.61	4.84	4.
	2 B		1	1	B	61	1800	19	0.00	17	431	52.55	34.16	82.49	1.41	1.
Ax	1 NB	(untitled)				448	Unrestricted	100	10.00	0	Unrestricted	43.60	0.00	0.00	0.00	
	2 B					31	Unrestricted	100	81.00	0	Unrestricted	81.13	0.00	0.00	0.00	
Bx	1	(untitled)				155	Unrestricted	100	52.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	66	1800	15	0.00	23	293	46.98	38.50	87.60	1.63	1.
Cx	1	(untitled)				64	Unrestricted	100	54.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	62	1800	7	0.00	43	109	70.15	53.18	103.58	1.80	1.
Dx	1 NB	(untitled)				61	Unrestricted	100	70.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	258.08	16.13	16.00	6.03	1.50	106.94	7.72	0.00	114.66
Bus	50.73	4.88	10.40	1.32	0.18	21.22	0.36	0.00	21.58
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	308.82	21.01	14.70	7.35	1.68	128.17	8.08	0.00	136.24

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D8 - 2030 No Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:45	27/05/2022 15:35:45	0.92	16:00	100	176.10	11.67	72.92	C/1	0	0	C/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 No Dev	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	159	77
	3	0	330	0	19
	4	0	178	32	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	61	0	0
	2	61	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	178
	3		4	3	C/1, Bx/1	Normal	32
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	330
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	159
	13		3	4	B/1, Cx/1	Normal	19
	15		2	4	A/1, Cx/1	Normal	77
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	31
	19		1	2	D/1, Ax/2	Normal	31
	20		2	1	A/2, Dx/1	Normal	61

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

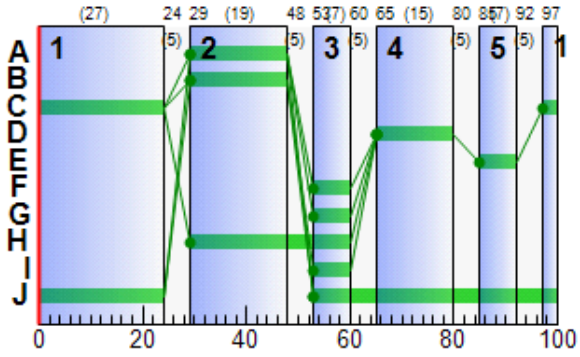
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

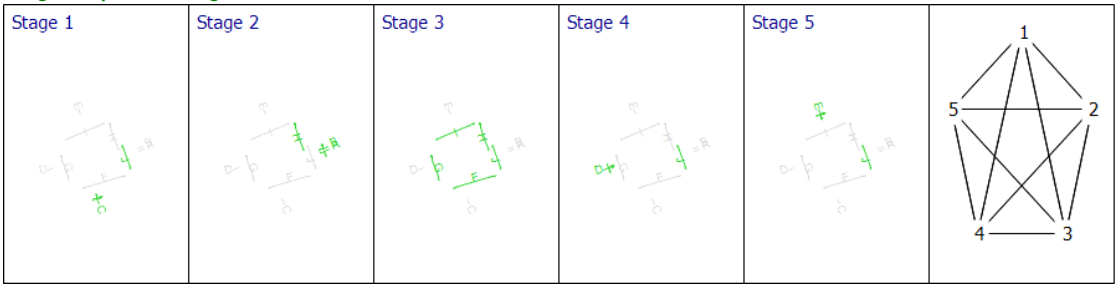
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	236	1800	19	0.00	66	37	55.35	46.16	99.17	6.64	5.
	2 B		1	1	B	61	1800	19	0.00	17	431	52.55	34.16	82.49	1.41	1.
Ax	1 NB	(untitled)				539	Unrestricted	100	7.00	0	Unrestricted	43.13	0.00	0.00	0.00	
	2 B					31	Unrestricted	100	81.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	349	1800	27	0.00	69	30	48.54	40.05	95.10	9.39	7.
Bx	1	(untitled)				191	Unrestricted	100	38.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	210	1800	15	0.00	73	23	64.57	56.08	108.71	6.48	5.
Cx	1	(untitled)				96	Unrestricted	100	54.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	62	1800	7	0.00	43	109	70.15	53.18	103.58	1.80	1.
Dx	1 NB	(untitled)				61	Unrestricted	100	70.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	322.56	20.93	15.41	7.86	2.32	144.56	9.96	0.00	154.51
Bus	50.73	4.88	10.40	1.32	0.18	21.22	0.36	0.00	21.58
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	373.30	25.81	14.46	9.18	2.50	165.78	10.32	0.00	176.10

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D9 - 2030 With Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:45	27/05/2022 15:35:46	1.16	08:45	100	152.88	10.14	82.74	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 With Dev	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	150	39
	3	0	392	0	25
	4	0	57	9	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	61	0	0
	2	61	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	57
	3		4	3	C/1, Bx/1	Normal	9
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	392
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	150
	13		3	4	B/1, Cx/1	Normal	25
	15		2	4	A/1, Cx/1	Normal	39
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	31
	19		1	2	D/1, Ax/2	Normal	31
	20		2	1	A/2, Dx/1	Normal	61

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

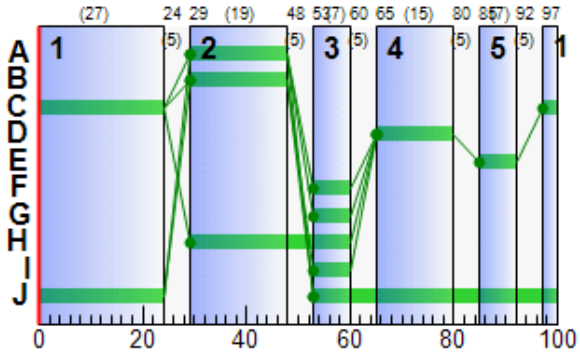
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

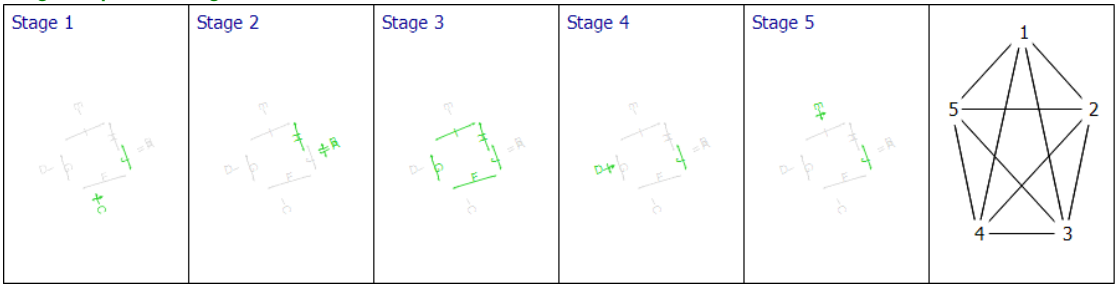
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	189	1800	19	0.00	53	71	50.43	41.24	93.05	4.96	4.
	2 B		1	1	B	61	1800	19	0.00	17	431	52.55	34.16	82.49	1.41	1.
Ax	1 NB	(untitled)				480	Unrestricted	100	8.00	0	Unrestricted	43.42	0.00	0.00	0.00	
	2 B					31	Unrestricted	100	81.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	417 <	1800	27	0.00	83	9	58.35	49.86	107.00	12.64 +	10
Bx	1	(untitled)				159	Unrestricted	100	51.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	66	1800	15	0.00	23	293	46.98	38.50	87.60	1.63	1.
Cx	1	(untitled)				64	Unrestricted	100	54.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	62	1800	7	0.00	43	109	70.15	53.18	103.58	1.80	1.
Dx	1 NB	(untitled)				61	Unrestricted	100	70.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	272.79	17.74	15.38	6.46	2.19	122.78	8.52	0.00	131.30
Bus	50.73	4.88	10.40	1.32	0.18	21.22	0.36	0.00	21.58
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	323.53	22.62	14.31	7.77	2.37	144.00	8.88	0.00	152.88

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D10 - 2030 With Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:46	27/05/2022 15:35:46	0.42	16:00	100	190.71	12.65	72.92	C/1	0	0	C/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 With Dev	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	183	77
	3	0	348	0	19
	4	0	178	32	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	61	0	0
	2	61	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	178
	3		4	3	C/1, Bx/1	Normal	32
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	348
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	183
	13		3	4	B/1, Cx/1	Normal	19
	15		2	4	A/1, Cx/1	Normal	77
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	31
	19		1	2	D/1, Ax/2	Normal	31
	20		2	1	A/2, Dx/1	Normal	61

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

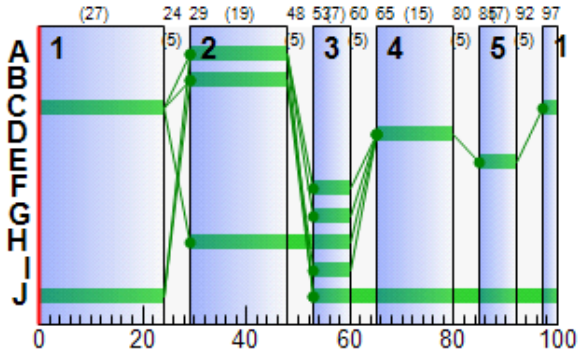
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

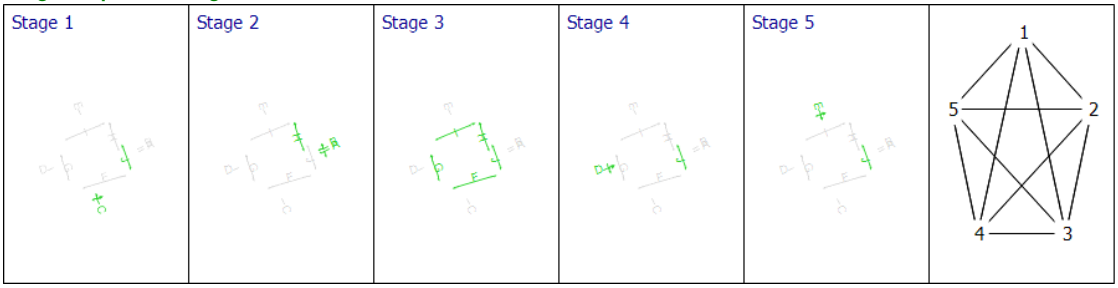
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	260	1800	19	0.00	72	25	59.20	50.00	103.83	7.63	6.
	2 B		1	1	B	61	1800	19	0.00	17	431	52.55	34.16	82.49	1.41	1.
Ax	1 NB	(untitled)				557	Unrestricted	100	6.00	0	Unrestricted	43.05	0.00	0.00	0.00	
	2 B					31	Unrestricted	100	81.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	367	1800	27	0.00	73	24	50.39	41.90	97.55	10.13	8.
Bx	1	(untitled)				215	Unrestricted	100	38.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	210	1800	15	0.00	73	23	64.57	56.08	108.71	6.48	5.
Cx	1	(untitled)				96	Unrestricted	100	53.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	62	1800	7	0.00	43	109	70.15	53.18	103.58	1.80	1.
Dx	1 NB	(untitled)				61	Unrestricted	100	70.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	339.39	22.47	15.11	8.35	2.80	158.39	10.74	0.00	169.12
Bus	50.73	4.88	10.40	1.32	0.18	21.22	0.36	0.00	21.58
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	390.12	27.34	14.27	9.67	2.98	179.61	11.10	0.00	190.71

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D11 - 2040 No Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:46	27/05/2022 15:35:46	0.67	08:45	100	149.94	9.95	80.36	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 No Dev	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	153	41
	3	0	379	0	26
	4	0	60	10	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	65	0	0
	2	65	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	60
	3		4	3	C/1, Bx/1	Normal	10
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	379
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	153
	13		3	4	B/1, Cx/1	Normal	26
	15		2	4	A/1, Cx/1	Normal	41
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	33
	19		1	2	D/1, Ax/2	Normal	33
	20		2	1	A/2, Dx/1	Normal	65

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

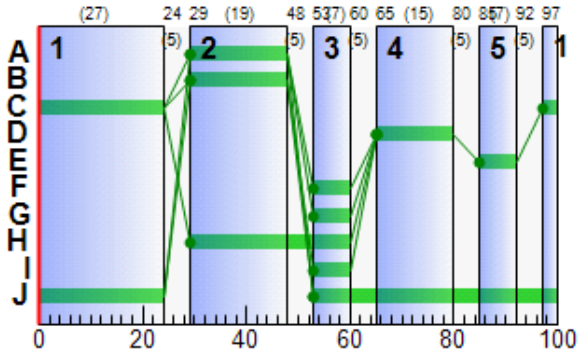
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

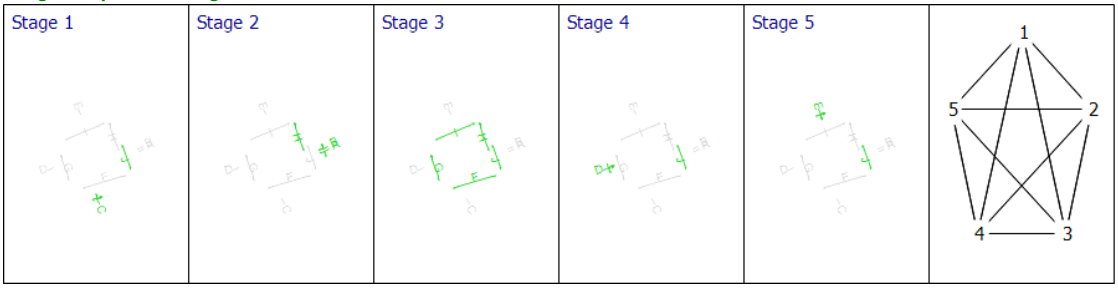
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	194	1800	19	0.00	54	67	50.85	41.66	93.46	5.11	4.
	2 B		1	1	B	65	1800	19	0.00	18	398	52.69	34.30	82.57	1.50	1.
Ax	1 NB	(untitled)				472	Unrestricted	100	8.00	0	Unrestricted	43.63	0.00	0.00	0.00	
	2 B					33	Unrestricted	100	80.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	405	1800	27	0.00	80	12	55.88	47.39	104.08	11.92	9.
Bx	1	(untitled)				163	Unrestricted	100	50.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	70	1800	15	0.00	24	270	47.22	38.74	87.81	1.73	1.
Cx	1	(untitled)				67	Unrestricted	100	52.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	66	1800	7	0.00	46	96	71.34	54.37	104.61	1.93	1.
Dx	1 NB	(untitled)				65	Unrestricted	100	69.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	271.47	17.38	15.62	6.41	1.92	118.28	8.33	0.00	126.61
Bus	54.03	5.22	10.35	1.41	0.21	22.95	0.38	0.00	23.33
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	325.51	22.60	14.40	7.82	2.13	141.23	8.71	0.00	149.94

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D12 - 2040 No Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:46	27/05/2022 15:35:46	0.95	16:00	100	193.29	12.83	76.74	C/1	0	0	C/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 No Dev	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	167	80
	3	0	347	0	20
	4	0	187	34	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	65	0	0
	2	65	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	187
	3		4	3	C/1, Bx/1	Normal	34
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	347
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	167
	13		3	4	B/1, Cx/1	Normal	20
	15		2	4	A/1, Cx/1	Normal	80
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	33
	19		1	2	D/1, Ax/2	Normal	33
	20		2	1	A/2, Dx/1	Normal	65

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

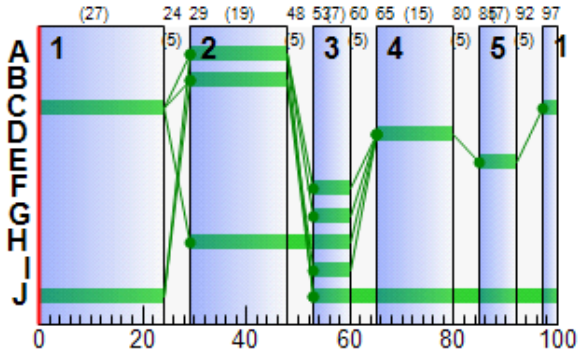
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

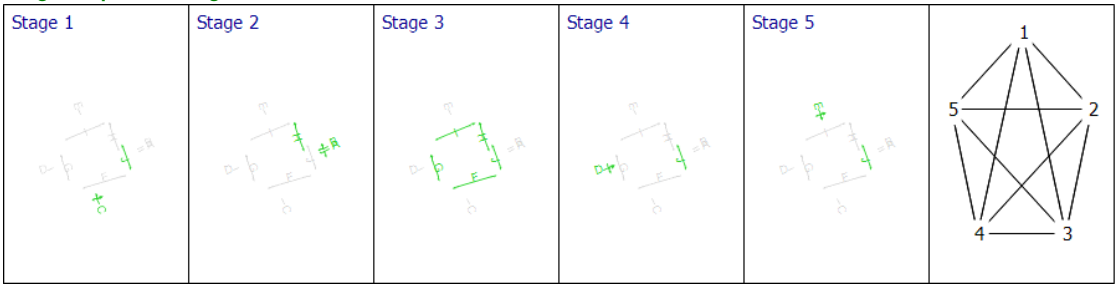
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	247	1800	19	0.00	69	31	56.95	47.76	101.11	7.04	6.
	2 B		1	1	B	65	1800	19	0.00	18	398	52.69	34.30	82.57	1.50	1.
Ax	1 NB	(untitled)				567	Unrestricted	100	6.00	0	Unrestricted	43.16	0.00	0.00	0.00	
	2 B					33	Unrestricted	100	80.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	367	1800	27	0.00	73	24	50.39	41.90	97.55	10.13	8.
Bx	1	(untitled)				201	Unrestricted	100	37.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	221	1800	15	0.00	77	17	68.19	59.70	112.32	7.03	6.
Cx	1	(untitled)				100	Unrestricted	100	52.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	66	1800	7	0.00	46	96	71.34	54.37	104.61	1.93	1.
Dx	1 NB	(untitled)				65	Unrestricted	100	69.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	338.78	22.51	15.05	8.33	2.88	159.23	10.73	0.00	169.96
Bus	54.03	5.22	10.35	1.41	0.21	22.95	0.38	0.00	23.33
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	392.82	27.72	14.17	9.74	3.09	182.18	11.12	0.00	193.29

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D13 - 2040 With Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:47	27/05/2022 15:35:47	0.47	08:45	100	171.55	11.40	86.71	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 With Dev	AM	(untitled)			08:45		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	157	41
	3	0	411	0	26
	4	0	60	10	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	65	0	0
	2	65	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	60
	3		4	3	C/1, Bx/1	Normal	10
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	411
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	157
	13		3	4	B/1, Cx/1	Normal	26
	15		2	4	A/1, Cx/1	Normal	41
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	33
	19		1	2	D/1, Ax/2	Normal	33
	20		2	1	A/2, Dx/1	Normal	65

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

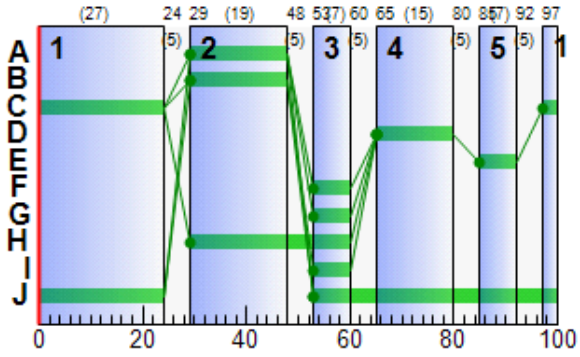
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

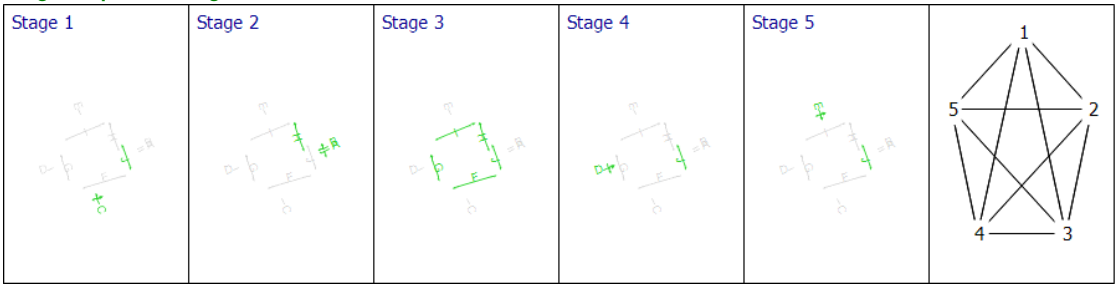
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	198	1800	19	0.00	55	64	51.20	42.00	93.76	5.23	4.
	2 B		1	1	B	65	1800	19	0.00	18	398	52.69	34.30	82.57	1.50	1.
Ax	1 NB	(untitled)				504	Unrestricted	100	6.00	0	Unrestricted	43.45	0.00	0.00	0.00	
	2 B					33	Unrestricted	100	80.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	437 <	1800	27	0.00	87	4	63.85	55.36	112.83	14.10 +	11
Bx	1	(untitled)				167	Unrestricted	100	50.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	70	1800	15	0.00	24	270	47.22	38.74	87.81	1.73	1.
Cx	1	(untitled)				67	Unrestricted	100	52.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	66	1800	7	0.00	46	96	71.34	54.37	104.61	1.93	1.
Dx	1 NB	(untitled)				65	Unrestricted	100	69.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	286.18	19.32	14.81	6.85	2.94	138.93	9.28	0.00	148.21
Bus	54.03	5.22	10.35	1.41	0.21	22.95	0.38	0.00	23.33
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	340.22	24.54	13.86	8.25	3.15	161.88	9.67	0.00	171.55

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D14 - 2040 With Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:35:47	27/05/2022 15:35:47	0.72	16:00	100	209.92	13.94	76.74	C/1	0	0	C/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 With Dev	PM	(untitled)			16:00		✓

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	191	80
	3	0	365	0	20
	4	0	187	34	0

Bus Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	65	0	0
	2	65	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	0
	2		4	2	C/1, Ax/1	Normal	187
	3		4	3	C/1, Bx/1	Normal	34
	6		1	3	D/1, Bx/1	Normal	0
	7		1	4	D/1, Cx/1	Normal	0
	9		3	2	B/1, Ax/1	Normal	365
	11		3	1	B/1, Dx/1	Normal	0
	12		2	3	A/1, Bx/1	Normal	191
	13		3	4	B/1, Cx/1	Normal	20
	15		2	4	A/1, Cx/1	Normal	80
	18		1	2	D/1, Ax/1	Normal	0

Bus Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Bus Calculated Flow (PCU/hr)
1	18		1	2	D/1, Ax/1	Normal	33
	19		1	2	D/1, Ax/2	Normal	33
	20		2	1	A/2, Dx/1	Normal	65

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Unknown	
	B	(untitled)	7	300	0	0	Unknown	
	C	(untitled)	7	300	0	0	Unknown	
	D	(untitled)	7	300	0	0	Unknown	
	E	(untitled)	7	300	0	0	Unknown	
	F	(untitled)	7	300	0	0	Pedestrian	0
	G	(untitled)	7	300	0	0	Pedestrian	0
	H	(untitled)	7	300	0	0	Pedestrian	0
	I	(untitled)	7	300	0	0	Pedestrian	0
	J	(untitled)	7	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	C, J	1	1	100
	2	A, B, H	1	1	100
	3	F, G, H, I, J	1	1	100
	4	D, J	1	1	100
	5	E, J	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	24, 48, 60, 80, 92	60	

Intergreen Matrix for Controller Stream 1

		To									
		A	B	C	D	E	F	G	H	I	J
From	A			5	5	5	5	5			5
	B			5	5	5				5	5
	C	5	5		5	5	5	5	5	5	
	D	5	5	5		5	5	5	5	5	
	E	5	5	5	5		5	5	5	5	
	F	5		5	5	5					
	G	5		5	5	5					
	H			5	5	5					
	I		5	5	5	5					
	J	5	5								

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	C,J	97	24	27	1	7
	2	✓	2	A,B,H	29	48	19	1	7
	3	✓	3	F,G,H,I,J	53	60	7	1	7
	4	✓	4	D,J	65	80	15	1	7
	5	✓	5	E,J	85	92	7	1	7

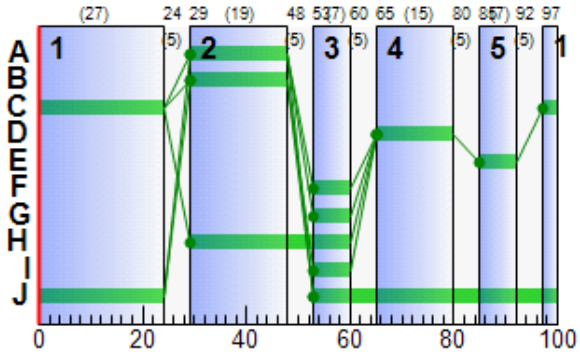
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	29	48	19
	B	1	✓	29	48	19
	C	1	✓	97	24	27
	D	1	✓	65	80	15
	E	1	✓	85	92	7
	F	1	✓	53	60	7
	G	1	✓	53	60	7
	H	1	✓	29	60	31
	I	1	✓	53	60	7
	J	1	✓	53	24	71

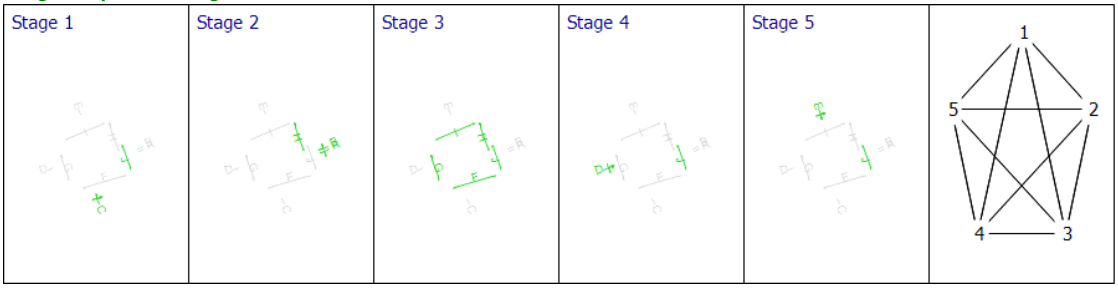
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	29	48	19
A	2	1	1	B	29	48	19
B	1	1	1	C	97	24	27
C	1	1	1	D	65	80	15
D	1	1	1	E	85	92	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1 NB	(untitled)	1	1	A	271	1800	19	0.00	75	20	61.49	52.29	106.44	8.18	7.
	2 B		1	1	B	65	1800	19	0.00	18	398	52.69	34.30	82.57	1.50	1.
Ax	1 NB	(untitled)				585	Unrestricted	100	5.00	0	Unrestricted	43.08	0.00	0.00	0.00	
	2 B					33	Unrestricted	100	80.00	0	Unrestricted	81.13	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	385	1800	27	0.00	76	18	52.65	44.16	100.38	10.93	8.
Bx	1	(untitled)				225	Unrestricted	100	37.00	0	Unrestricted	38.00	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	221	1800	15	0.00	77	17	68.19	59.70	112.32	7.03	6.
Cx	1	(untitled)				100	Unrestricted	100	51.00	0	Unrestricted	39.79	0.00	0.00	0.00	
D	1 NB	(untitled)	1	1	E	66	1800	7	0.00	46	96	71.34	54.37	104.61	1.93	1.
Dx	1 NB	(untitled)				65	Unrestricted	100	69.00	0	Unrestricted	81.29	0.00	0.00	0.00	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	355.61	24.18	14.71	8.83	3.49	175.01	11.57	0.00	186.58
Bus	54.03	5.22	10.35	1.41	0.21	22.95	0.38	0.00	23.33
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	409.65	29.40	13.94	10.24	3.70	197.96	11.96	0.00	209.92

- *N = at least one source for this link/traffic stream carries normal traffic*
- *B = at least one source for this link/traffic stream carries Bus traffic*
- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 16

Version: 16.0.1.8473

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Q003 Existing Scenario 20220512 FB.t16
Path: J:\Q_JOBS\Job-Q003\B_Documents\1.0_Civil\4_Reports\TTA\Modelling
Report generation date: 27/05/2022 15:41:32

Summary of network performance

	AM					PM				
	Set ID	Total delay (PCU-hr/hr)	Highest DOS	Number oversaturated	Within capacity	Set ID	Total delay (PCU-hr/hr)	Highest DOS	Number oversaturated	Within capacity
	Standard - 2022 Baseline									
Network	D1	6.84	60% (TS B/1)	0 (0%)	YES	D2	8.95	56% (TS C/1)	0 (0%)	YES
	Standard - 2025 No Dev									
Network	D3	7.47	64% (TS B/1)	0 (0%)	YES	D4	9.93	61% (TS D/1)	0 (0%)	YES
	Standard - 2025 With Dev									
Network	D5	8.31	70% (TS B/1)	0 (0%)	YES	D6	10.94	62% (TS D/1)	0 (0%)	YES
	Standard - 2030 No Dev									
Network	D7	8.44	69% (TS B/1)	0 (0%)	YES	D8	11.26	65% (TS D/1)	0 (0%)	YES
	Standard - 2030 With Dev									
Network	D9	9.06	75% (TS B/1)	0 (0%)	YES	D10	11.41	67% (TS D/1)	0 (0%)	YES
	Standard - 2040 No Dev									
Network	D11	9.14	73% (TS B/1)	0 (0%)	YES	D12	12.26	69% (TS C/1)	0 (0%)	YES
	Standard - 2040 With Dev									
Network	D13	10.18	78% (TS B/1)	0 (0%)	YES	D14	13.42	70% (TS D/1)	0 (0%)	YES

File summary

File description

File title	Belgard Square East
Location	Belgard Square
Site number	
UTCRegion	
Driving side	Left
Date	11/05/2022
Version	Existing Junction Layout
Status	
Identifier	
Client	
Jobnumber	Q003
Enumerator	FB
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display OD matrix distances	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber	c m
			✓			✓	✓	✓	✓	✓	✓	✓			

Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
€	kph	m	mpg	l/h	kg	PCU	PCU	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Average animation capture interval (s)	Use quick response	Do flow sampling	Uniform vehicle generation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	10000	10000	-1	3	60	✓			0	0	0.00

A1 - Standard
D1 - 2022 Baseline, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:08	27/05/2022 15:41:09	1.40	08:45	100	103.75	6.84	60.39	B/1	0	0	B/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2022 Baseline	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	5	99	12
	2	30	0	22	20
	3	311	4	0	22
	4	23	26	8	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	23
	2		4	2	C/1, Ax/1	Normal	13
	3		4	3	C/1, Bx/1	Normal	8
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	99
	7		1	4	D/1, Cx/1	Normal	12
	9		2	3	A/1, Bx/1	Normal	22
	10		2	4	A/1, Cx/1	Normal	20
	11		3	1	B/1, Dx/1	Normal	311
	12		3	2	B/1, Ax/1	Normal	2
	13		3	4	B/1, Cx/1	Normal	22
	14		2	1	A/2, Dx/1	Normal	30
	15		4	2	C/1, Ax/2	Normal	13
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	2

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	44	321
	2	18	0	16
	3	86	43	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	43
	2		3	1	3C1/1, 3Ax/1	Normal	86
	3		1	2	3A1/1, 3Bx/1	Normal	44
	4		1	3	3A1/1, 3Cx/1	Normal	321
	5		2	3	3B1/1, 3Cx/1	Normal	16
	6		2	1	3B1/1, 3Ax/1	Normal	18

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	86
	2	0	0	0
	3	321	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	321
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	86
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	86
	2	0	0	0
	3	321	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	321
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	86
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

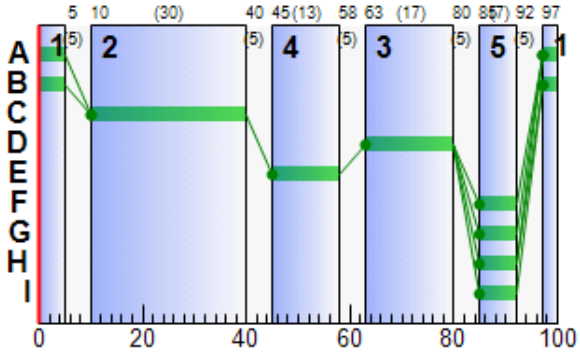
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

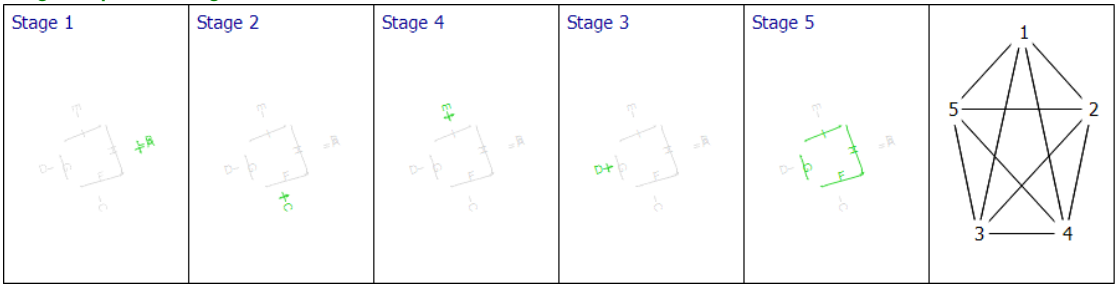
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUES	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Me en of r que (PC
A	1	(untitled)	1	1	A	42	1800	8	6.00	26	247	54.78	46.29	95.64	1.13	1.
	2		1	1	B	30	1800	8	7.00	19	386	53.18	44.70	93.32	0.79	0.
Ax	1	(untitled)				18	Unrestricted	100	93.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					18	Unrestricted	100	93.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	337	1800	30	0.00	60	49	42.65	34.16	87.50	8.32	6.
Bx	1	(untitled)				129	Unrestricted	100	47.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	57	1800	17	15.00	18	412	44.42	35.94	84.00	1.35	1.
Cx	1	(untitled)				54	Unrestricted	100	53.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	117	1800	13	0.00	46	94	54.17	45.68	95.85	3.16	2.
Dx	1	(untitled)				364	Unrestricted	100	13.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					104	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					87	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					337	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					321	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					86	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					321	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					86	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			365	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			34	406	100	100.00	8	974	17.37	9.63	0.00	0.09	
3C1	1		3			129	955	100	0.00	14	566	13.38	4.34	0.00	0.16	
4A1	1		6			86	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			321	1800	100	0.00	18	405	11.47	2.43	0.00	0.22	
7A1	1		7			86	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			321	1800	100	0.00	18	405	11.47	2.43	0.00	0.22	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	521.20	24.22	21.52	5.42	1.42	97.19	6.56	0.00	103.75
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	521.20	24.22	21.52	5.42	1.42	97.19	6.56	0.00	103.75

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D2 - 2022 Baseline, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:09	27/05/2022 15:41:09	0.86	16:00	100	135.28	8.95	56.17	C/1	0	0	C/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2022 Baseline	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	8	106	24
	2	21	0	25	36
	3	285	4	0	16
	4	78	76	28	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	78
	2		4	2	C/1, Ax/1	Normal	38
	3		4	3	C/1, Bx/1	Normal	28
	5		1	2	D/1, Ax/1	Normal	4
	6		1	3	D/1, Bx/1	Normal	106
	7		1	4	D/1, Cx/1	Normal	24
	9		2	3	A/1, Bx/1	Normal	25
	10		2	4	A/1, Cx/1	Normal	36
	11		3	1	B/1, Dx/1	Normal	285
	12		3	2	B/1, Ax/1	Normal	2
	13		3	4	B/1, Cx/1	Normal	16
	14		2	1	A/2, Dx/1	Normal	21
	15		4	2	C/1, Ax/2	Normal	38
	16		1	2	D/1, Ax/2	Normal	4
	17		3	2	B/1, Ax/2	Normal	2

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	50	227
	2	68	0	83
	3	115	45	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	45
	2		3	1	3C1/1, 3Ax/1	Normal	115
	3		1	2	3A1/1, 3Bx/1	Normal	50
	4		1	3	3A1/1, 3Cx/1	Normal	227
	5		2	3	3B1/1, 3Cx/1	Normal	83
	6		2	1	3B1/1, 3Ax/1	Normal	68

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	115
	2	0	0	0
	3	227	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	227
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	115
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	115
	2	0	0	0
	3	227	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	227
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	115
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

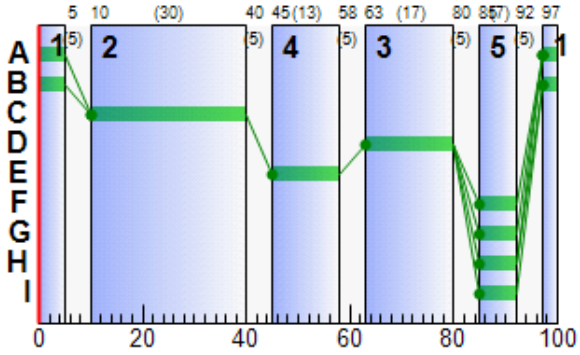
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

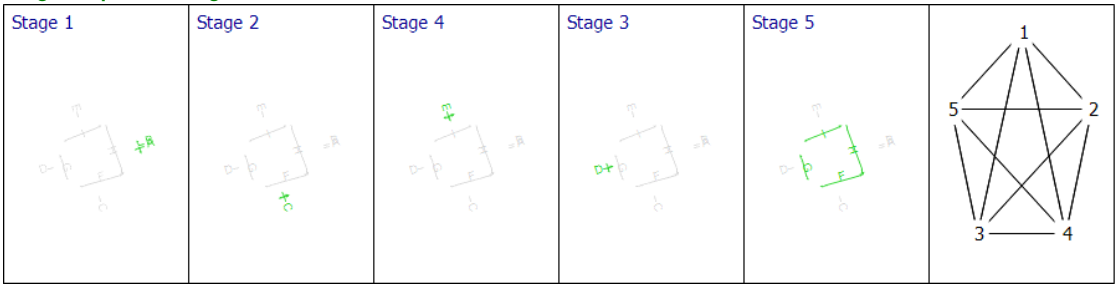
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUES	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Me en of r que (PC
A	1	(untitled)	1	1	A	61	1800	8	0.00	38	139	58.01	49.53	99.30	1.71	1.
	2		1	1	B	21	1800	8	7.00	13	594	52.06	43.57	92.43	0.55	0.
Ax	1	(untitled)				44	Unrestricted	100	75.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					44	Unrestricted	100	75.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	305	1800	30	0.00	55	65	41.01	32.53	84.79	7.36	6.
Bx	1	(untitled)				159	Unrestricted	100	36.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	182	1800	17	0.00	56	60	52.92	44.44	96.43	4.96	4.
Cx	1	(untitled)				76	Unrestricted	100	47.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	138	1800	13	0.00	55	64	57.06	48.57	99.82	3.89	3.
Dx	1	(untitled)				384	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					183	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					95	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					310	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					227	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					115	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					227	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					115	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			277	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			151	434	100	0.00	35	159	20.31	12.56	0.00	0.53	
3C1	1		3			160	1055	100	0.00	15	493	13.05	4.01	0.00	0.18	
4A1	1		6			115	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			227	1800	100	0.00	13	614	11.32	2.29	0.00	0.14	
7A1	1		7			115	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			227	1800	100	0.00	13	614	11.32	2.29	0.00	0.14	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	554.22	27.43	20.21	6.83	2.12	127.11	8.17	0.00	135.28
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	554.22	27.43	20.21	6.83	2.12	127.11	8.17	0.00	135.28

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D3 - 2025 No Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:10	27/05/2022 15:41:10	0.48	08:45	100	113.20	7.47	63.62	B/1	0	0	B/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 No Dev	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	6	110	13
	2	32	0	23	21
	3	328	4	0	23
	4	24	28	8	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	24
	2		4	2	C/1, Ax/1	Normal	14
	3		4	3	C/1, Bx/1	Normal	8
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	110
	7		1	4	D/1, Cx/1	Normal	13
	9		2	3	A/1, Bx/1	Normal	23
	10		2	4	A/1, Cx/1	Normal	21
	11		3	1	B/1, Dx/1	Normal	328
	12		3	2	B/1, Ax/1	Normal	2
	13		3	4	B/1, Cx/1	Normal	23
	14		2	1	A/2, Dx/1	Normal	32
	15		4	2	C/1, Ax/2	Normal	14
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	2

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	46	339
	2	18	0	17
	3	94	47	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	47
	2		3	1	3C1/1, 3Ax/1	Normal	94
	3		1	2	3A1/1, 3Bx/1	Normal	46
	4		1	3	3A1/1, 3Cx/1	Normal	339
	5		2	3	3B1/1, 3Cx/1	Normal	17
	6		2	1	3B1/1, 3Ax/1	Normal	18

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	92
	2	0	0	0
	3	341	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	341
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	92
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	92
	2	0	0	0
	3	341	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	341
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	92
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

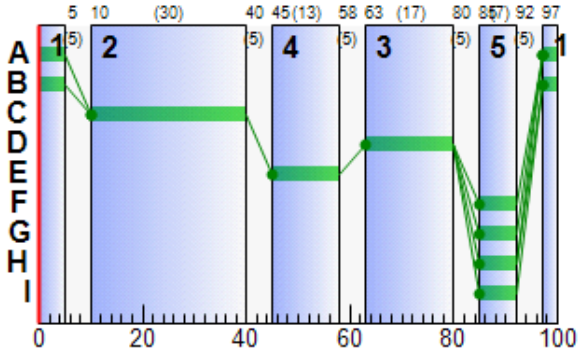
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

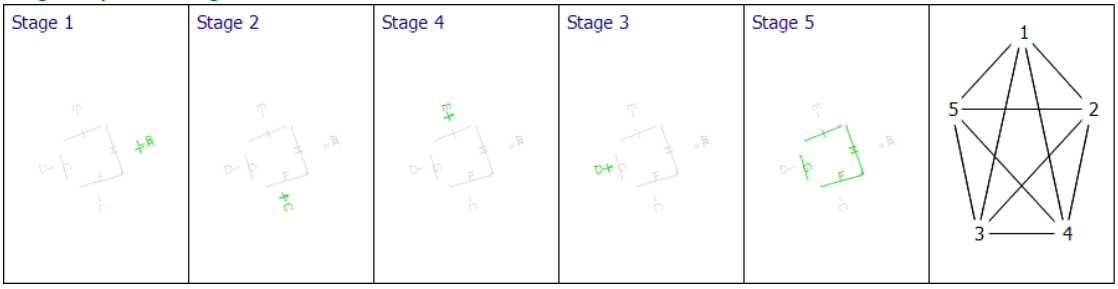
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUES	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Me en of r que (PC
A	1	(untitled)	1	1	A	44	1800	8	6.00	27	231	55.09	46.60	95.90	1.19	1.
	2		1	1	B	32	1800	8	7.00	20	356	53.43	44.94	93.52	0.84	0.
Ax	1	(untitled)				19	Unrestricted	100	92.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					19	Unrestricted	100	92.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	355	1800	30	0.00	64	41	43.72	35.23	89.18	8.93	7.
Bx	1	(untitled)				141	Unrestricted	100	45.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	60	1800	17	0.00	19	386	44.55	36.06	84.07	1.42	1.
Cx	1	(untitled)				57	Unrestricted	100	50.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	129	1800	13	0.00	51	76	55.73	47.25	98.08	3.56	3.
Dx	1	(untitled)				384	Unrestricted	100	13.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					112	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					93	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					356	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					341	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					92	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					341	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					92	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			385	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			35	402	100	100.00	9	935	17.49	9.74	0.00	0.09	
3C1	1		3			141	950	100	0.00	15	506	13.47	4.44	0.00	0.17	
4A1	1		6			92	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			341	1800	100	0.00	19	375	11.50	2.46	0.00	0.23	
7A1	1		7			92	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			341	1800	100	0.00	19	375	11.50	2.46	0.00	0.23	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	554.20	25.95	21.36	5.83	1.65	106.11	7.09	0.00	113.20
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	554.20	25.95	21.36	5.83	1.65	106.11	7.09	0.00	113.20

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D4 - 2025 No Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:10	27/05/2022 15:41:10	0.92	16:00	100	149.87	9.93	60.71	D/1	0	0	D/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 No Dev	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	9	117	26
	2	23	0	28	40
	3	300	4	0	17
	4	82	82	29	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	82
	2		4	2	C/1, Ax/1	Normal	41
	3		4	3	C/1, Bx/1	Normal	29
	5		1	2	D/1, Ax/1	Normal	5
	6		1	3	D/1, Bx/1	Normal	117
	7		1	4	D/1, Cx/1	Normal	26
	9		2	3	A/1, Bx/1	Normal	28
	10		2	4	A/1, Cx/1	Normal	40
	11		3	1	B/1, Dx/1	Normal	300
	12		3	2	B/1, Ax/1	Normal	2
	13		3	4	B/1, Cx/1	Normal	17
	14		2	1	A/2, Dx/1	Normal	23
	15		4	2	C/1, Ax/2	Normal	41
	16		1	2	D/1, Ax/2	Normal	5
	17		3	2	B/1, Ax/2	Normal	2

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	52	240
	2	71	0	87
	3	126	49	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	49
	2		3	1	3C1/1, 3Ax/1	Normal	126
	3		1	2	3A1/1, 3Bx/1	Normal	52
	4		1	3	3A1/1, 3Cx/1	Normal	240
	5		2	3	3B1/1, 3Cx/1	Normal	87
	6		2	1	3B1/1, 3Ax/1	Normal	71

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	122
	2	0	0	0
	3	243	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	243
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	122
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	122
	2	0	0	0
	3	243	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	243
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	122
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

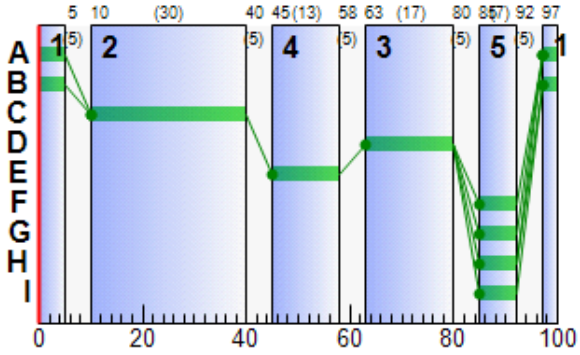
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

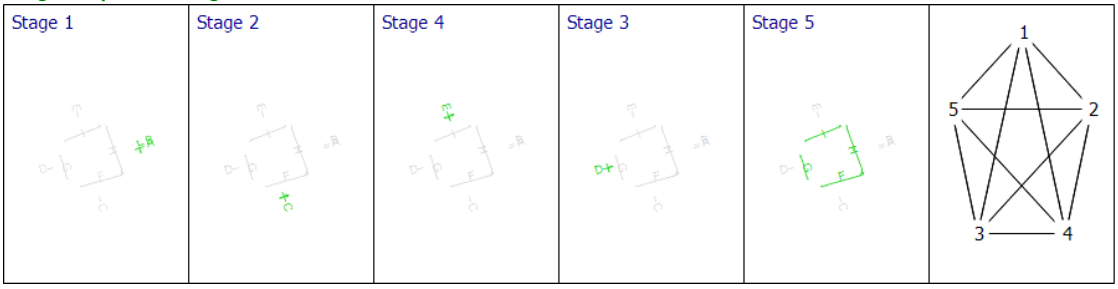
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	68	1800	8	0.00	42	114	59.49	51.00	100.60	1.93	1.
	2		1	1	B	23	1800	8	7.00	14	534	52.32	43.83	92.64	0.60	0.
Ax	1	(untitled)				48	Unrestricted	100	74.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					48	Unrestricted	100	74.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	321	1800	30	0.00	58	56	41.79	33.31	86.01	7.79	6.
Bx	1	(untitled)				174	Unrestricted	100	34.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	193	1800	17	0.00	60	51	54.21	45.72	97.70	5.31	4.
Cx	1	(untitled)				83	Unrestricted	100	44.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	153	1800	13	0.00	61	48	59.71	51.22	102.34	4.41	4.
Dx	1	(untitled)				405	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					197	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					101	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					327	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					243	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					122	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					243	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					122	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			292	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			158	430	100	0.00	37	145	20.83	13.08	0.00	0.57	
3C1	1		3			175	1053	100	0.00	17	441	13.13	4.09	0.00	0.20	
4A1	1		6			122	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			243	1800	100	0.00	14	567	11.34	2.31	0.00	0.16	
7A1	1		7			122	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			243	1800	100	0.00	14	567	11.34	2.31	0.00	0.16	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	592.39	29.67	19.96	7.40	2.52	140.95	8.91	0.00	149.87
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	592.39	29.67	19.96	7.40	2.52	140.95	8.91	0.00	149.87

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D5 - 2025 With Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:11	27/05/2022 15:41:11	0.79	08:45	100	125.66	8.31	69.53	B/1	0	0	B/1	4C1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 With Dev	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	6	111	13
	2	32	0	26	21
	3	337	27	0	23
	4	24	28	8	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	24
	2		4	2	C/1, Ax/1	Normal	14
	3		4	3	C/1, Bx/1	Normal	8
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	111
	7		1	4	D/1, Cx/1	Normal	13
	9		2	3	A/1, Bx/1	Normal	26
	10		2	4	A/1, Cx/1	Normal	21
	11		3	1	B/1, Dx/1	Normal	337
	12		3	2	B/1, Ax/1	Normal	14
	13		3	4	B/1, Cx/1	Normal	23
	14		2	1	A/2, Dx/1	Normal	32
	15		4	2	C/1, Ax/2	Normal	14
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	14

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	46	371
	2	18	0	17
	3	98	47	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	47
	2		3	1	3C1/1, 3Ax/1	Normal	98
	3		1	2	3A1/1, 3Bx/1	Normal	46
	4		1	3	3A1/1, 3Cx/1	Normal	371
	5		2	3	3B1/1, 3Cx/1	Normal	17
	6		2	1	3B1/1, 3Ax/1	Normal	18

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

		To		
		1	2	3
From	1	0	4	93
	2	28	0	15
	3	353	12	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	12
	2		3	1	4C1/1, 4Ax/1	Normal	353
	3		1	2	4A1/1, 4Bx/1	Normal	4
	4		1	3	4A1/1, 4Cx/1	Normal	93
	5		2	3	4B1/1, 4Cx/1	Normal	15
	6		2	1	4B1/1, 4Ax/1	Normal	28

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	3	120
	2	2	0	1
	3	345	7	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	7
	2		3	1	7C1/1, 7Ax/1	Normal	345
	3		1	2	7A1/1, 7Bx/1	Normal	3
	4		1	3	7A1/1, 7Cx/1	Normal	120
	5		2	3	7B1/1, 7Cx/1	Normal	1
	6		2	1	7B1/1, 7Ax/1	Normal	2

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

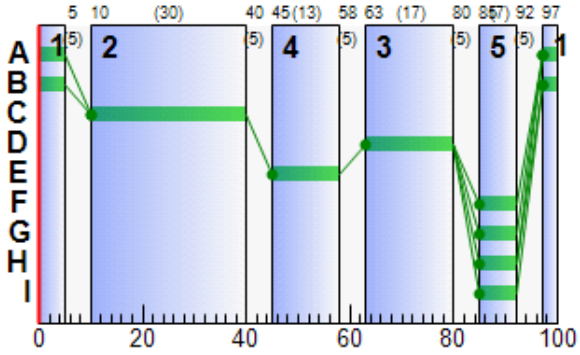
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

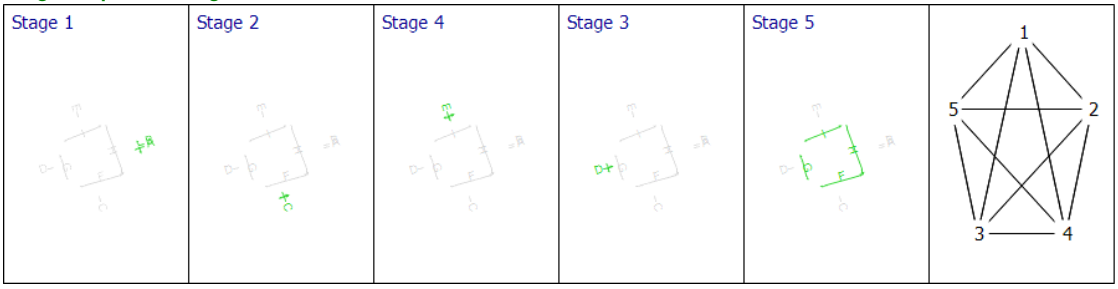
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUES	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Me en of r que (PC
A	1	(untitled)	1	1	A	47	1800	8	6.00	29	210	55.56	47.07	96.28	1.27	1.
	2		1	1	B	32	1800	8	7.00	20	356	53.43	44.94	93.52	0.84	0.
Ax	1	(untitled)				31	Unrestricted	100	91.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					31	Unrestricted	100	91.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	388	1800	30	0.00	70	29	46.07	37.58	92.75	10.16	8.
Bx	1	(untitled)				145	Unrestricted	100	44.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	60	1800	17	0.00	19	386	44.55	36.06	84.07	1.42	1.
Cx	1	(untitled)				57	Unrestricted	100	49.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	130	1800	13	0.00	52	74	55.87	47.39	98.19	3.59	3.
Dx	1	(untitled)				393	Unrestricted	100	13.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					116	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					93	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					388	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					381	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					16	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
4Cx	1					108	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					347	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					10	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
7Cx	1					121	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			417	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			35	395	100	100.00	9	916	17.68	9.94	0.00	0.10	
3C1	1		3			145	953	100	0.00	15	492	13.48	4.44	0.00	0.18	
4A1	1		6			97	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			43	420	100	100.00	10	780	17.23	9.49	0.00	0.11	
4C1	1		6			365	1676	100	0.00	22	313	11.78	2.74	0.00	0.28	
7A1	1		7			123	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			3	414	100	100.00	1	12330	16.45	8.71	0.00	0.01	
7C1	1		7			352	1721	100	0.00	20	340	11.66	2.62	0.00	0.26	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	600.44	28.32	21.20	6.22	2.09	117.97	7.69	0.00	125.66
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	600.44	28.32	21.20	6.22	2.09	117.97	7.69	0.00	125.66

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D6 - 2025 With Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:11	27/05/2022 15:41:12	1.36	16:00	100	164.94	10.94	62.30	D/1	0	0	D/1	3B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025 With Dev	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	9	121	26
	2	23	0	48	40
	3	305	17	0	17
	4	82	82	29	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	82
	2		4	2	C/1, Ax/1	Normal	41
	3		4	3	C/1, Bx/1	Normal	29
	5		1	2	D/1, Ax/1	Normal	5
	6		1	3	D/1, Bx/1	Normal	121
	7		1	4	D/1, Cx/1	Normal	26
	9		2	3	A/1, Bx/1	Normal	48
	10		2	4	A/1, Cx/1	Normal	40
	11		3	1	B/1, Dx/1	Normal	305
	12		3	2	B/1, Ax/1	Normal	9
	13		3	4	B/1, Cx/1	Normal	17
	14		2	1	A/2, Dx/1	Normal	23
	15		4	2	C/1, Ax/2	Normal	41
	16		1	2	D/1, Ax/2	Normal	5
	17		3	2	B/1, Ax/2	Normal	9

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	52	260
	2	71	0	87
	3	150	49	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	49
	2		3	1	3C1/1, 3Ax/1	Normal	150
	3		1	2	3A1/1, 3Bx/1	Normal	52
	4		1	3	3A1/1, 3Cx/1	Normal	260
	5		2	3	3B1/1, 3Cx/1	Normal	87
	6		2	1	3B1/1, 3Ax/1	Normal	71

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	21	125
	2	12	0	12
	3	268	30	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	30
	2		3	1	4C1/1, 4Ax/1	Normal	268
	3		1	2	4A1/1, 4Bx/1	Normal	21
	4		1	3	4A1/1, 4Cx/1	Normal	125
	5		2	3	4B1/1, 4Cx/1	Normal	12
	6		2	1	4B1/1, 4Ax/1	Normal	12

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	3	134
	2	3	0	3
	3	264	4	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	4
	2		3	1	7C1/1, 7Ax/1	Normal	264
	3		1	2	7A1/1, 7Bx/1	Normal	3
	4		1	3	7A1/1, 7Cx/1	Normal	134
	5		2	3	7B1/1, 7Cx/1	Normal	3
	6		2	1	7B1/1, 7Ax/1	Normal	3

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

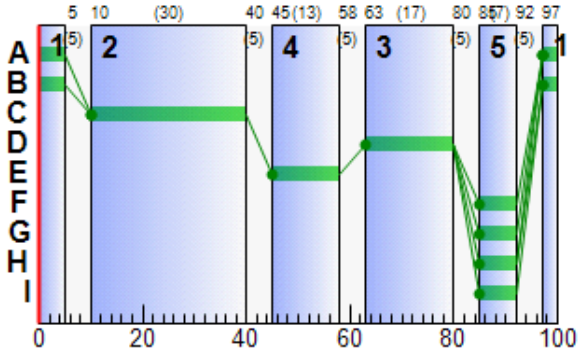
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

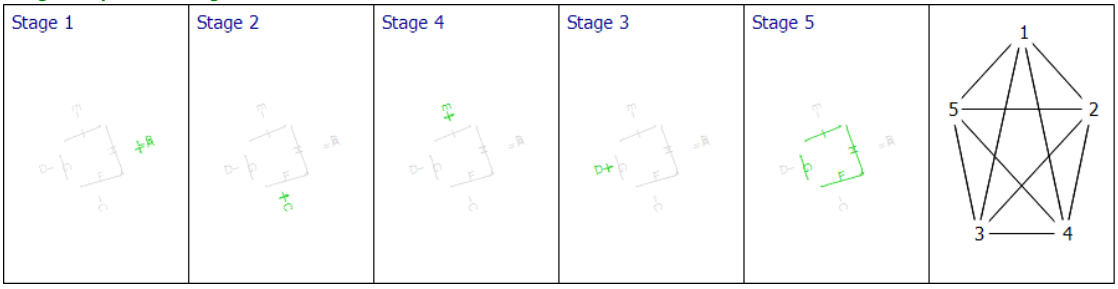
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	88	1800	8	0.00	54	66	64.95	56.47	106.32	2.64	2.
	2		1	1	B	23	1800	8	7.00	14	534	52.32	43.83	92.64	0.60	0.
Ax	1	(untitled)				55	Unrestricted	100	74.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					55	Unrestricted	100	74.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	340	1800	30	0.00	61	48	42.82	34.33	87.81	8.50	6.
Bx	1	(untitled)				198	Unrestricted	100	28.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	193	1800	17	0.00	60	51	54.21	45.72	97.70	5.31	4.
Cx	1	(untitled)				83	Unrestricted	100	43.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	157	1800	13	0.00	62	44	60.54	52.05	103.76	4.60	4.
Dx	1	(untitled)				410	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					221	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					101	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					347	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					280	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					51	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
4Cx	1					137	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					267	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					7	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
7Cx	1					137	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			312	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			158	424	100	0.00	37	141	21.14	13.39	0.00	0.59	
3C1	1		3			199	1103	100	0.00	18	399	13.01	3.97	0.00	0.22	
4A1	1		6			146	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			24	441	100	100.00	5	1553	16.34	8.60	0.00	0.06	
4C1	1		6			298	1459	100	0.00	20	341	12.13	3.09	0.00	0.26	
7A1	1		7			137	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			6	446	100	100.00	1	6589	15.89	8.15	0.00	0.01	
7C1	1		7			268	1740	100	0.00	15	484	11.48	2.44	0.00	0.18	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	649.12	32.58	19.93	7.89	3.05	155.35	9.59	0.00	164.94
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	649.12	32.58	19.93	7.89	3.05	155.35	9.59	0.00	164.94

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D7 - 2030 No Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:12	27/05/2022 15:41:12	0.79	08:45	100	127.81	8.44	69.18	B/1	0	0	B/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 No Dev	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	6	119	14
	2	34	0	25	23
	3	355	5	0	25
	4	26	31	9	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	26
	2		4	2	C/1, Ax/1	Normal	16
	3		4	3	C/1, Bx/1	Normal	9
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	119
	7		1	4	D/1, Cx/1	Normal	14
	9		2	3	A/1, Bx/1	Normal	25
	10		2	4	A/1, Cx/1	Normal	23
	11		3	1	B/1, Dx/1	Normal	355
	12		3	2	B/1, Ax/1	Normal	3
	13		3	4	B/1, Cx/1	Normal	25
	14		2	1	A/2, Dx/1	Normal	34
	15		4	2	C/1, Ax/2	Normal	16
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	3

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	50	367
	2	20	0	18
	3	102	51	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	51
	2		3	1	3C1/1, 3Ax/1	Normal	102
	3		1	2	3A1/1, 3Bx/1	Normal	50
	4		1	3	3A1/1, 3Cx/1	Normal	367
	5		2	3	3B1/1, 3Cx/1	Normal	18
	6		2	1	3B1/1, 3Ax/1	Normal	20

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	99
	2	0	0	0
	3	369	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	369
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	99
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	99
	2	0	0	0
	3	369	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	369
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	99
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

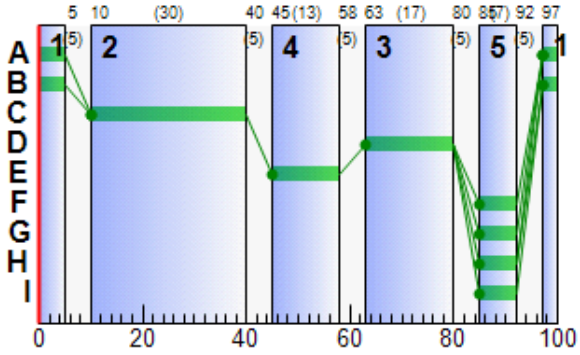
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

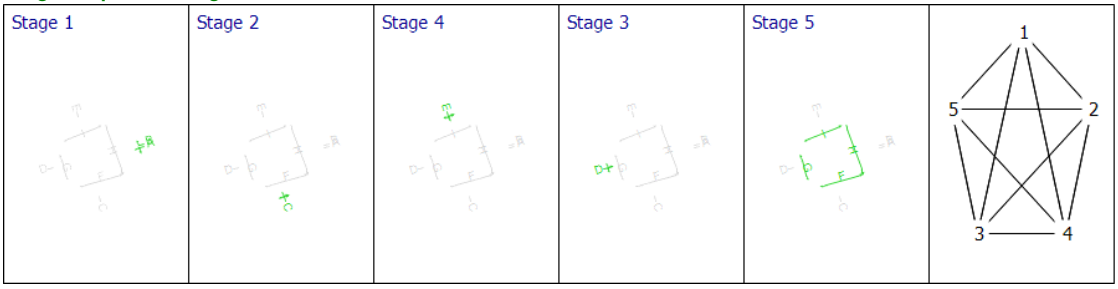
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	48	1800	8	6.00	30	204	55.72	47.23	96.41	1.30	1.
	2		1	1	B	34	1800	8	7.00	21	329	53.68	45.19	93.74	0.90	0.
Ax	1	(untitled)				22	Unrestricted	100	90.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					22	Unrestricted	100	90.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	386	1800	30	0.00	69	30	45.91	37.42	92.60	10.09	8.
Bx	1	(untitled)				153	Unrestricted	100	43.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	67	1800	17	0.00	21	335	44.87	36.38	85.16	1.61	1.
Cx	1	(untitled)				62	Unrestricted	100	45.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	139	1800	13	0.00	55	63	57.22	48.74	100.03	3.92	3.
Dx	1	(untitled)				415	Unrestricted	100	12.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					122	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					101	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					385	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					369	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					99	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					369	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					99	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			417	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			38	393	100	100.00	10	830	17.83	10.09	0.00	0.11	
3C1	1		3			153	941	100	0.00	16	453	13.59	4.56	0.00	0.19	
4A1	1		6			99	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			369	1800	100	0.00	21	339	11.55	2.51	0.00	0.26	
7A1	1		7			99	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			369	1800	100	0.00	21	339	11.55	2.51	0.00	0.26	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	600.93	28.47	21.10	6.41	2.03	119.89	7.92	0.00	127.81
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	600.93	28.47	21.10	6.41	2.03	119.89	7.92	0.00	127.81

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D8 - 2030 No Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:12	27/05/2022 15:41:13	1.28	16:00	100	169.86	11.26	65.48	D/1	0	0	D/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 No Dev	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	10	126	29
	2	25	0	30	44
	3	325	5	0	19
	4	89	88	32	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	89
	2		4	2	C/1, Ax/1	Normal	44
	3		4	3	C/1, Bx/1	Normal	32
	5		1	2	D/1, Ax/1	Normal	5
	6		1	3	D/1, Bx/1	Normal	126
	7		1	4	D/1, Cx/1	Normal	29
	9		2	3	A/1, Bx/1	Normal	30
	10		2	4	A/1, Cx/1	Normal	44
	11		3	1	B/1, Dx/1	Normal	325
	12		3	2	B/1, Ax/1	Normal	3
	13		3	4	B/1, Cx/1	Normal	19
	14		2	1	A/2, Dx/1	Normal	25
	15		4	2	C/1, Ax/2	Normal	44
	16		1	2	D/1, Ax/2	Normal	5
	17		3	2	B/1, Ax/2	Normal	3

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	56	260
	2	77	0	94
	3	136	53	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	53
	2		3	1	3C1/1, 3Ax/1	Normal	136
	3		1	2	3A1/1, 3Bx/1	Normal	56
	4		1	3	3A1/1, 3Cx/1	Normal	260
	5		2	3	3B1/1, 3Cx/1	Normal	94
	6		2	1	3B1/1, 3Ax/1	Normal	77

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	132
	2	0	0	0
	3	263	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	263
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	132
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	132
	2	0	0	0
	3	263	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	263
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	132
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

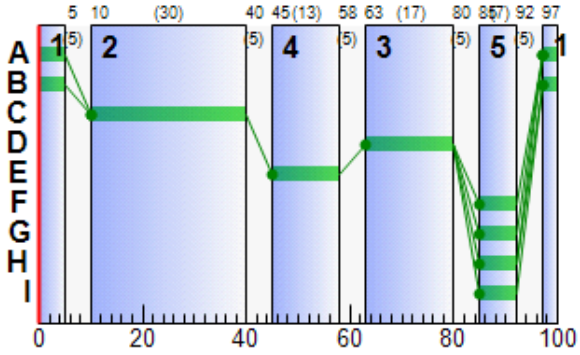
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

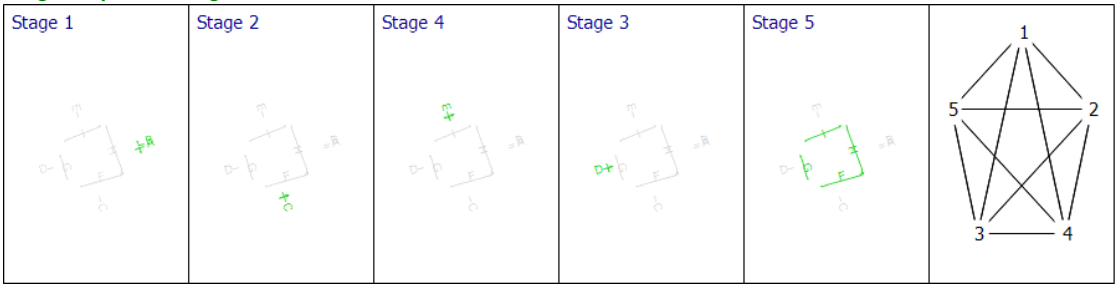
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	74	1800	8	0.00	46	97	60.88	52.40	101.82	2.12	2.
	2		1	1	B	25	1800	8	7.00	15	483	52.57	44.08	92.83	0.65	0.
Ax	1	(untitled)				52	Unrestricted	100	73.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					52	Unrestricted	100	73.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	350	1800	30	0.00	63	43	43.41	34.92	88.88	8.79	7.
Bx	1	(untitled)				188	Unrestricted	100	32.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	209	1800	17	0.00	65	40	56.42	47.93	100.42	5.92	5.
Cx	1	(untitled)				92	Unrestricted	100	40.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	165	1800	13	0.00	65	37	62.38	53.89	105.54	4.91	4.
Dx	1	(untitled)				439	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					213	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					109	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					354	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					263	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					132	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					263	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					132	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			316	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			171	424	100	0.00	40	123	21.81	14.07	0.00	0.67	
3C1	1		3			189	1045	100	0.00	18	398	13.23	4.19	0.00	0.22	
4A1	1		6			132	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			263	1800	100	0.00	15	516	11.37	2.34	0.00	0.17	
7A1	1		7			132	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			263	1800	100	0.00	15	516	11.37	2.34	0.00	0.17	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	642.11	32.66	19.66	8.13	3.13	159.91	9.95	0.00	169.86
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	642.11	32.66	19.66	8.13	3.13	159.91	9.95	0.00	169.86

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D9 - 2030 With Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:13	27/05/2022 15:41:13	0.75	08:45	100	137.13	9.06	74.73	B/1	0	0	B/1	3B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 With Dev	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	6	120	14
	2	34	0	28	23
	3	364	28	0	25
	4	26	31	9	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	26
	2		4	2	C/1, Ax/1	Normal	16
	3		4	3	C/1, Bx/1	Normal	9
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	120
	7		1	4	D/1, Cx/1	Normal	14
	9		2	3	A/1, Bx/1	Normal	28
	10		2	4	A/1, Cx/1	Normal	23
	11		3	1	B/1, Dx/1	Normal	364
	12		3	2	B/1, Ax/1	Normal	14
	13		3	4	B/1, Cx/1	Normal	25
	14		2	1	A/2, Dx/1	Normal	34
	15		4	2	C/1, Ax/2	Normal	16
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	14

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows not shown as they are blank.

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	0
	2		3	1	3C1/1, 3Ax/1	Normal	0
	3		1	2	3A1/1, 3Bx/1	Normal	0
	4		1	3	3A1/1, 3Cx/1	Normal	0
	5		2	3	3B1/1, 3Cx/1	Normal	0
	6		2	1	3B1/1, 3Ax/1	Normal	0

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	4	100
	2	28	0	15
	3	381	12	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	12
	2		3	1	4C1/1, 4Ax/1	Normal	381
	3		1	2	4A1/1, 4Bx/1	Normal	4
	4		1	3	4A1/1, 4Cx/1	Normal	100
	5		2	3	4B1/1, 4Cx/1	Normal	15
	6		2	1	4B1/1, 4Ax/1	Normal	28

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	3	127
	2	2	0	1
	3	373	7	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	7
	2		3	1	7C1/1, 7Ax/1	Normal	373
	3		1	2	7A1/1, 7Bx/1	Normal	3
	4		1	3	7A1/1, 7Cx/1	Normal	127
	5		2	3	7B1/1, 7Cx/1	Normal	1
	6		2	1	7B1/1, 7Ax/1	Normal	2

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

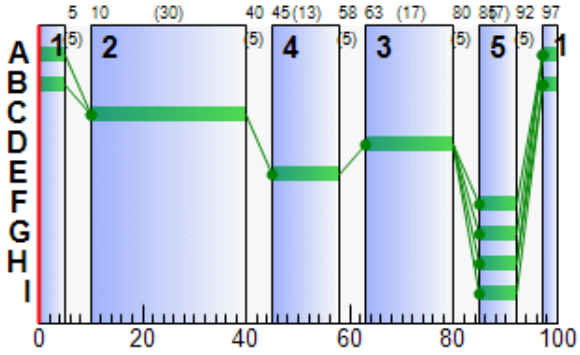
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

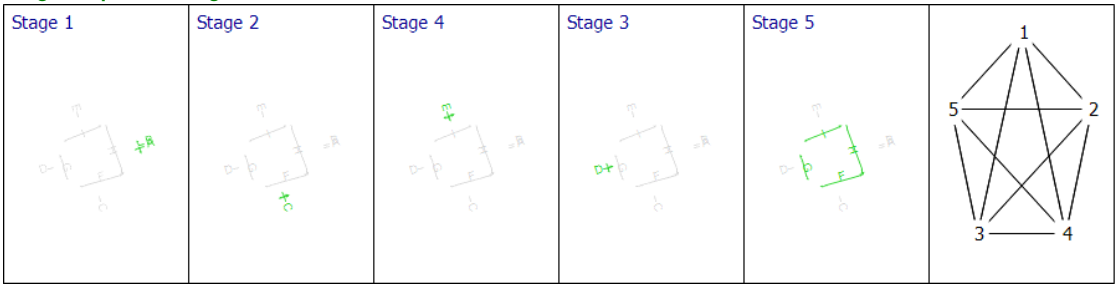
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	51	1800	8	6.00	31	186	56.21	47.72	96.82	1.39	1.
	2		1	1	B	34	1800	8	7.00	21	329	53.68	45.19	93.74	0.90	0.
Ax	1	(untitled)				33	Unrestricted	100	89.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					33	Unrestricted	100	89.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	417	1800	30	0.00	75	20	48.77	40.28	96.64	11.39	9.
Bx	1	(untitled)				157	Unrestricted	100	42.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	67	1800	17	0.00	21	335	44.87	36.38	85.16	1.61	1.
Cx	1	(untitled)				62	Unrestricted	100	44.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	140	1800	13	0.00	56	62	57.38	48.90	100.23	3.96	3.
Dx	1	(untitled)				424	Unrestricted	100	11.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
3Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
3Cx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Ax	1					409	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					16	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
4Cx	1					115	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					375	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					10	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
7Cx	1					128	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
3B1	1		3			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
3C1	1		3			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4A1	1		6			104	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			43	416	100	100.00	10	770	17.34	9.60	0.00	0.11	
4C1	1		6			393	1683	100	0.00	23	286	11.82	2.78	0.00	0.30	
7A1	1		7			130	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			3	410	100	100.00	1	12196	16.55	8.80	0.00	0.01	
7C1	1		7			380	1727	100	0.00	22	309	11.70	2.67	0.00	0.28	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	514.54	26.21	19.63	6.80	2.25	128.59	8.55	0.00	137.13
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	514.54	26.21	19.63	6.80	2.25	128.59	8.55	0.00	137.13

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:14	27/05/2022 15:41:14	0.82	16:00	100	172.68	11.41	67.06	D/1	0	0	D/1	3B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 With Dev	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	10	130	29
	2	25	0	50	44
	3	330	18	0	19
	4	89	88	32	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	89
	2		4	2	C/1, Ax/1	Normal	44
	3		4	3	C/1, Bx/1	Normal	32
	5		1	2	D/1, Ax/1	Normal	5
	6		1	3	D/1, Bx/1	Normal	130
	7		1	4	D/1, Cx/1	Normal	29
	9		2	3	A/1, Bx/1	Normal	50
	10		2	4	A/1, Cx/1	Normal	44
	11		3	1	B/1, Dx/1	Normal	330
	12		3	2	B/1, Ax/1	Normal	9
	13		3	4	B/1, Cx/1	Normal	19
	14		2	1	A/2, Dx/1	Normal	25
	15		4	2	C/1, Ax/2	Normal	44
	16		1	2	D/1, Ax/2	Normal	5
	17		3	2	B/1, Ax/2	Normal	9

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows not shown as they are blank.

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	0
	2		3	1	3C1/1, 3Ax/1	Normal	0
	3		1	2	3A1/1, 3Bx/1	Normal	0
	4		1	3	3A1/1, 3Cx/1	Normal	0
	5		2	3	3B1/1, 3Cx/1	Normal	0
	6		2	1	3B1/1, 3Ax/1	Normal	0

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	21	135
	2	12	0	12
	3	288	30	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	30
	2		3	1	4C1/1, 4Ax/1	Normal	288
	3		1	2	4A1/1, 4Bx/1	Normal	21
	4		1	3	4A1/1, 4Cx/1	Normal	135
	5		2	3	4B1/1, 4Cx/1	Normal	12
	6		2	1	4B1/1, 4Ax/1	Normal	12

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	3	144
	2	3	0	3
	3	284	4	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	4
	2		3	1	7C1/1, 7Ax/1	Normal	284
	3		1	2	7A1/1, 7Bx/1	Normal	3
	4		1	3	7A1/1, 7Cx/1	Normal	144
	5		2	3	7B1/1, 7Cx/1	Normal	3
	6		2	1	7B1/1, 7Ax/1	Normal	3

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

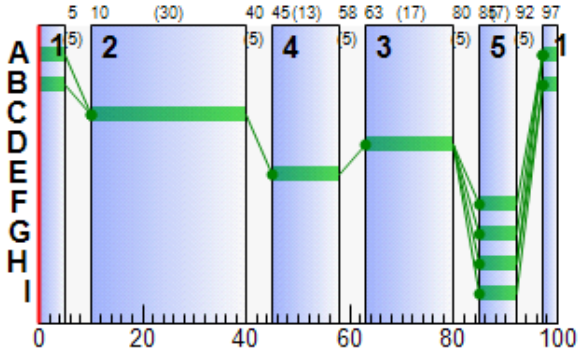
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

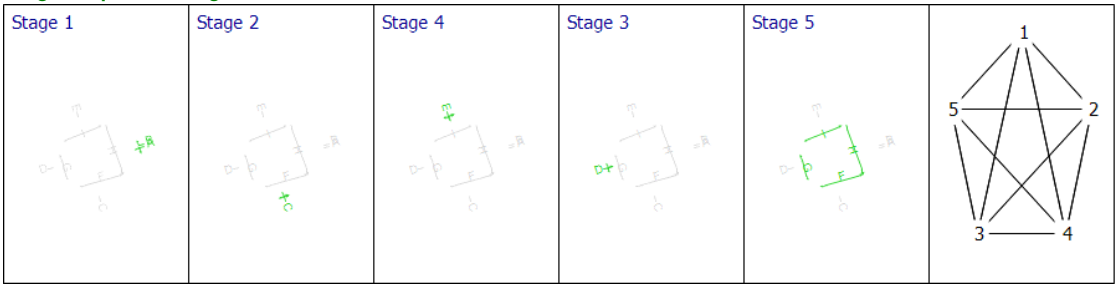
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	94	1800	8	0.00	58	55	67.11	58.62	108.35	2.90	2.
	2		1	1	B	25	1800	8	7.00	15	483	52.57	44.08	92.83	0.65	0.
Ax	1	(untitled)				58	Unrestricted	100	73.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					58	Unrestricted	100	73.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	367	1800	30	0.00	66	37	44.51	36.02	90.59	9.39	7.
Bx	1	(untitled)				212	Unrestricted	100	26.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	209	1800	17	0.00	65	40	56.42	47.93	100.42	5.92	5.
Cx	1	(untitled)				92	Unrestricted	100	40.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	169	1800	13	0.00	67	34	63.39	54.91	106.42	5.07	4.
Dx	1	(untitled)				444	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
3Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
3Cx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Ax	1					300	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					51	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
4Cx	1					147	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					287	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					7	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
7Cx	1					147	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
3B1	1		3			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
3C1	1		3			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4A1	1		6			156	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			24	437	100	100.00	5	1538	16.42	8.68	0.00	0.06	
4C1	1		6			318	1475	100	0.00	22	317	12.14	3.11	0.00	0.27	
7A1	1		7			147	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			6	442	100	100.00	1	6530	15.96	8.22	0.00	0.01	
7C1	1		7			288	1744	100	0.00	17	445	11.50	2.47	0.00	0.20	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	550.67	29.77	18.50	8.61	2.81	162.06	10.62	0.00	172.68
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	550.67	29.77	18.50	8.61	2.81	162.06	10.62	0.00	172.68

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D11 - 2040 No Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:14	27/05/2022 15:41:15	1.26	08:45	100	138.24	9.14	72.76	B/1	0	0	B/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 No Dev	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	6	125	15
	2	36	0	26	24
	3	374	5	0	26
	4	28	32	10	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	28
	2		4	2	C/1, Ax/1	Normal	16
	3		4	3	C/1, Bx/1	Normal	10
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	125
	7		1	4	D/1, Cx/1	Normal	15
	9		2	3	A/1, Bx/1	Normal	26
	10		2	4	A/1, Cx/1	Normal	24
	11		3	1	B/1, Dx/1	Normal	374
	12		3	2	B/1, Ax/1	Normal	3
	13		3	4	B/1, Cx/1	Normal	26
	14		2	1	A/2, Dx/1	Normal	36
	15		4	2	C/1, Ax/2	Normal	16
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	3

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	53	386
	2	21	0	19
	3	107	54	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	54
	2		3	1	3C1/1, 3Ax/1	Normal	107
	3		1	2	3A1/1, 3Bx/1	Normal	53
	4		1	3	3A1/1, 3Cx/1	Normal	386
	5		2	3	3B1/1, 3Cx/1	Normal	19
	6		2	1	3B1/1, 3Ax/1	Normal	21

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	105
	2	0	0	0
	3	388	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	388
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	105
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	105
	2	0	0	0
	3	388	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	388
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	105
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

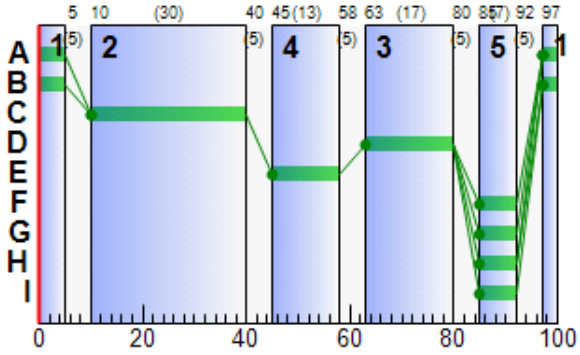
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

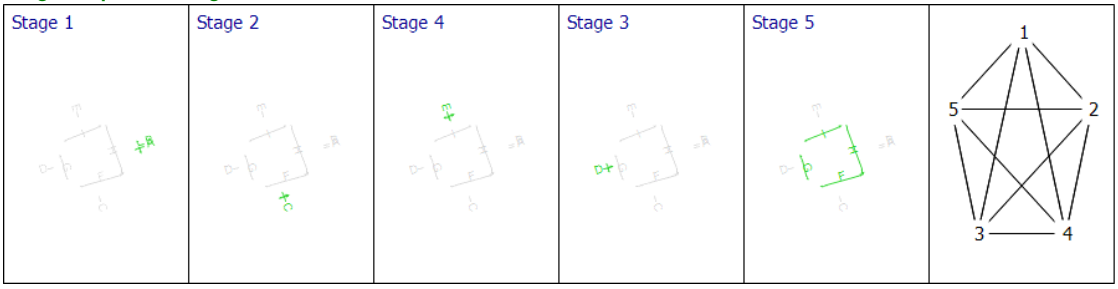
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	50	1800	8	6.00	31	192	56.04	47.56	96.68	1.36	1.
	2		1	1	B	36	1800	8	7.00	22	305	53.93	45.44	93.95	0.95	0.
Ax	1	(untitled)				22	Unrestricted	100	89.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					22	Unrestricted	100	89.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	406	1800	30	0.00	73	24	47.66	39.17	95.10	10.99	8.
Bx	1	(untitled)				161	Unrestricted	100	42.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	70	1800	17	0.00	22	317	45.02	36.54	85.33	1.68	1.
Cx	1	(untitled)				65	Unrestricted	100	43.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	146	1800	13	0.00	58	55	58.41	49.92	101.22	4.16	3.
Dx	1	(untitled)				438	Unrestricted	100	11.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					128	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					107	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					405	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					388	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					105	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					388	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					105	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			439	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			40	387	100	100.00	10	772	18.04	10.30	0.00	0.11	
3C1	1		3			161	932	100	0.00	17	421	13.69	4.66	0.00	0.21	
4A1	1		6			105	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			388	1800	100	0.00	22	318	11.58	2.54	0.00	0.27	
7A1	1		7			105	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			388	1800	100	0.00	22	318	11.58	2.54	0.00	0.27	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	632.08	30.21	20.92	6.80	2.34	129.77	8.47	0.00	138.24
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.08	30.21	20.92	6.80	2.34	129.77	8.47	0.00	138.24

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D12 - 2040 No Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:15	27/05/2022 15:41:15	0.72	16:00	100	184.79	12.26	68.52	C/1	0	0	C/1	4B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 No Dev	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	10	132	30
	2	26	0	32	46
	3	342	5	0	20
	4	94	93	34	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	94
	2		4	2	C/1, Ax/1	Normal	47
	3		4	3	C/1, Bx/1	Normal	34
	5		1	2	D/1, Ax/1	Normal	5
	6		1	3	D/1, Bx/1	Normal	132
	7		1	4	D/1, Cx/1	Normal	30
	9		2	3	A/1, Bx/1	Normal	32
	10		2	4	A/1, Cx/1	Normal	46
	11		3	1	B/1, Dx/1	Normal	342
	12		3	2	B/1, Ax/1	Normal	3
	13		3	4	B/1, Cx/1	Normal	20
	14		2	1	A/2, Dx/1	Normal	26
	15		4	2	C/1, Ax/2	Normal	47
	16		1	2	D/1, Ax/2	Normal	5
	17		3	2	B/1, Ax/2	Normal	3

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	59	273
	2	81	0	99
	3	143	56	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	56
	2		3	1	3C1/1, 3Ax/1	Normal	143
	3		1	2	3A1/1, 3Bx/1	Normal	59
	4		1	3	3A1/1, 3Cx/1	Normal	273
	5		2	3	3B1/1, 3Cx/1	Normal	99
	6		2	1	3B1/1, 3Ax/1	Normal	81

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	139
	2	0	0	0
	3	277	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	0
	2		3	1	4C1/1, 4Ax/1	Normal	277
	3		1	2	4A1/1, 4Bx/1	Normal	0
	4		1	3	4A1/1, 4Cx/1	Normal	139
	5		2	3	4B1/1, 4Cx/1	Normal	0
	6		2	1	4B1/1, 4Ax/1	Normal	0

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	0	139
	2	0	0	0
	3	277	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	0
	2		3	1	7C1/1, 7Ax/1	Normal	277
	3		1	2	7A1/1, 7Bx/1	Normal	0
	4		1	3	7A1/1, 7Cx/1	Normal	139
	5		2	3	7B1/1, 7Cx/1	Normal	0
	6		2	1	7B1/1, 7Ax/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

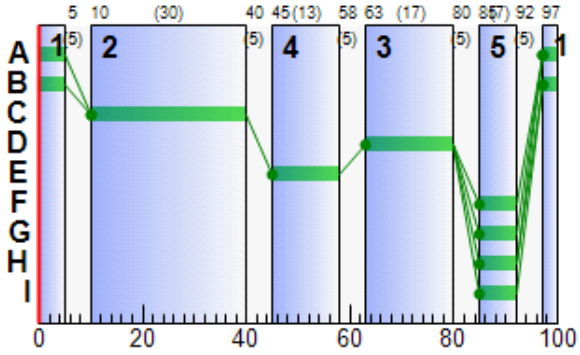
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

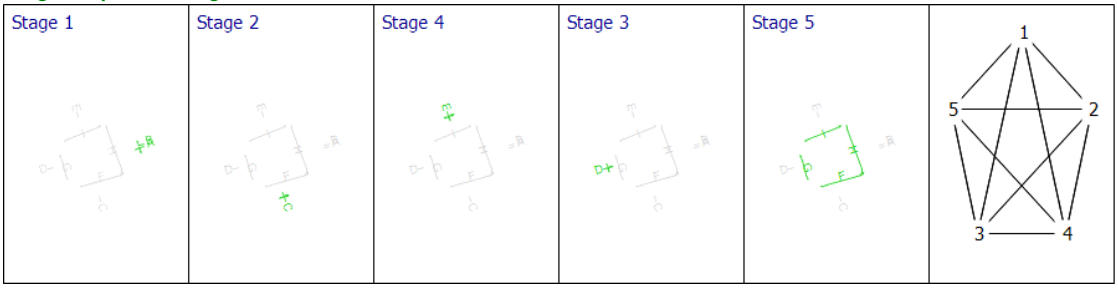
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	78	1800	8	0.00	48	87	61.93	53.44	103.49	2.28	2.
	2		1	1	B	26	1800	8	7.00	16	461	52.69	44.21	92.92	0.68	0.
Ax	1	(untitled)				55	Unrestricted	100	72.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					55	Unrestricted	100	72.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	368	1800	30	0.00	66	36	44.58	36.09	90.66	9.42	7.
Bx	1	(untitled)				198	Unrestricted	100	30.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	222	1800	17	0.00	69	31	58.61	50.13	103.11	6.46	5.
Cx	1	(untitled)				96	Unrestricted	100	38.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	172	1800	13	0.00	68	32	64.22	55.73	107.57	5.25	4.
Dx	1	(untitled)				462	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					224	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					115	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					372	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					277	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
4Cx	1					139	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					277	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					0	Unrestricted	100	100.00	0	Unrestricted	0.00	0.00	0.00	0.00	
7Cx	1					139	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			332	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			180	419	100	0.00	43	110	22.57	14.82	0.00	0.74	
3C1	1		3			199	1040	100	0.00	19	370	13.31	4.27	0.00	0.24	
4A1	1		6			139	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
4C1	1		6			277	1800	100	0.00	15	485	11.40	2.36	0.00	0.18	
7A1	1		7			139	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			0	0	100	100.00	0	-100	0.00	0.00	0.00	0.00	
7C1	1		7			277	1800	100	0.00	15	485	11.40	2.36	0.00	0.18	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	675.74	34.79	19.43	8.62	3.64	174.10	10.69	0.00	184.79
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	675.74	34.79	19.43	8.62	3.64	174.10	10.69	0.00	184.79

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D13 - 2040 With Dev, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:15	27/05/2022 15:41:16	1.23	08:45	100	153.64	10.18	78.32	B/1	0	0	B/1	4C1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 With Dev	AM	(untitled)			08:45		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	6	126	15
	2	36	0	29	24
	3	383	28	0	26
	4	28	32	10	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	28
	2		4	2	C/1, Ax/1	Normal	16
	3		4	3	C/1, Bx/1	Normal	10
	5		1	2	D/1, Ax/1	Normal	3
	6		1	3	D/1, Bx/1	Normal	126
	7		1	4	D/1, Cx/1	Normal	15
	9		2	3	A/1, Bx/1	Normal	29
	10		2	4	A/1, Cx/1	Normal	24
	11		3	1	B/1, Dx/1	Normal	383
	12		3	2	B/1, Ax/1	Normal	14
	13		3	4	B/1, Cx/1	Normal	26
	14		2	1	A/2, Dx/1	Normal	36
	15		4	2	C/1, Ax/2	Normal	16
	16		1	2	D/1, Ax/2	Normal	3
	17		3	2	B/1, Ax/2	Normal	14

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	53	418
	2	21	0	19
	3	111	54	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	54
	2		3	1	3C1/1, 3Ax/1	Normal	111
	3		1	2	3A1/1, 3Bx/1	Normal	53
	4		1	3	3A1/1, 3Cx/1	Normal	418
	5		2	3	3B1/1, 3Cx/1	Normal	19
	6		2	1	3B1/1, 3Ax/1	Normal	21

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	4	106
	2	28	0	15
	3	400	12	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	12
	2		3	1	4C1/1, 4Ax/1	Normal	400
	3		1	2	4A1/1, 4Bx/1	Normal	4
	4		1	3	4A1/1, 4Cx/1	Normal	106
	5		2	3	4B1/1, 4Cx/1	Normal	15
	6		2	1	4B1/1, 4Ax/1	Normal	28

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	3	133
	2	2	0	1
	3	392	7	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	7
	2		3	1	7C1/1, 7Ax/1	Normal	392
	3		1	2	7A1/1, 7Bx/1	Normal	3
	4		1	3	7A1/1, 7Cx/1	Normal	133
	5		2	3	7B1/1, 7Cx/1	Normal	1
	6		2	1	7B1/1, 7Ax/1	Normal	2

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	
	10	(untitled)	Single	1, 3, 4, 5, 2	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

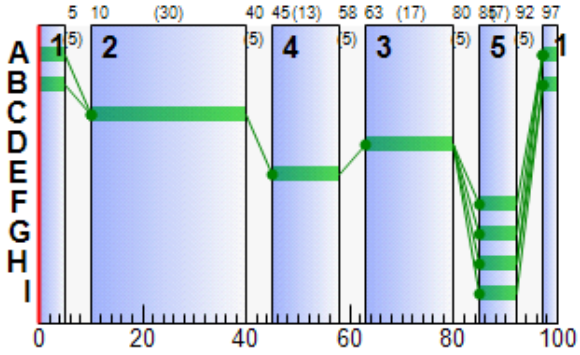
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

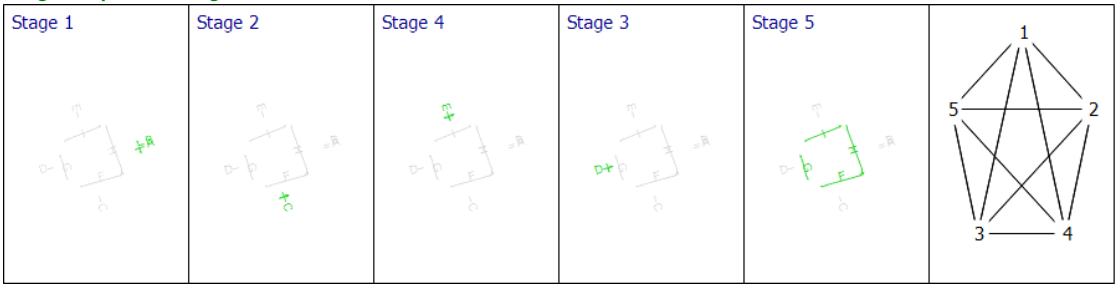
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
08:45-09:45	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	53	1800	8	6.00	33	175	56.54	48.05	97.11	1.45	1.
	2		1	1	B	36	1800	8	7.00	22	305	53.93	45.44	93.95	0.95	0.
Ax	1	(untitled)				33	Unrestricted	100	89.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					33	Unrestricted	100	89.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	437 <	1800	30	0.00	78	15	51.18	42.69	99.79	12.41 +	9.
Bx	1	(untitled)				165	Unrestricted	100	40.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	70	1800	17	0.00	22	317	45.02	36.54	85.33	1.68	1.
Cx	1	(untitled)				65	Unrestricted	100	42.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	147	1800	13	0.00	58	54	58.58	50.10	101.38	4.20	3.
Dx	1	(untitled)				447	Unrestricted	100	10.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					132	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					107	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					437	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					428	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					16	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
4Cx	1					121	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					394	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					10	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
7Cx	1					134	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			471	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			40	380	100	100.00	11	755	18.26	10.51	0.00	0.12	
3C1	1		3			165	934	100	0.00	18	409	13.71	4.67	0.00	0.21	
4A1	1		6			110	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			43	413	100	100.00	10	763	17.43	9.68	0.00	0.12	
4C1	1		6			412	1688	100	0.00	24	269	11.85	2.82	0.00	0.32	
7A1	1		7			136	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			3	407	100	100.00	1	12096	16.62	8.88	0.00	0.01	
7C1	1		7			399	1730	100	0.00	23	290	11.74	2.70	0.00	0.30	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	677.51	32.76	20.68	7.19	2.98	144.49	9.15	0.00	153.64
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	677.51	32.76	20.68	7.19	2.98	144.49	9.15	0.00	153.64

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

A1 - Standard
D14 - 2040 With Dev, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
1	27/05/2022 15:41:16	27/05/2022 15:41:16	0.79	16:00	100	201.90	13.42	69.84	D/1	0	0	D/1	3B1/

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
Standard					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2040 With Dev	PM	(untitled)			16:00		✓

T-Junctions

T-Junctions

T-Junction	Name	Description	Auto assign priority	Type	Traffic direction on Arm A	Entry aB	Entry aC	Exit a	Traffic direction on Arm B	Entry bA	Entry bC	Exit b	Traffic direction on Arm C	Entry cA	Entry cB	Exit c	Calc Slo an Inter
3	(untitled)		✓	TrafficStream	Two-Way	3A1/1	3A1/1	3Ax/1	Two-Way	3B1/1	3B1/1	3Bx/1	Two-Way	3C1/1	3C1/1	3Cx/1	
6	(untitled)		✓	TrafficStream	Two-Way	4A1/1	4A1/1	4Ax/1	Two-Way	4B1/1	4B1/1	4Bx/1	Two-Way	4C1/1	4C1/1	4Cx/1	
7	(untitled)		✓	TrafficStream	Two-Way	7A1/1	7A1/1	7Ax/1	Two-Way	7B1/1	7B1/1	7Bx/1	Two-Way	7C1/1	7C1/1	7Cx/1	

T-Junction Majors

T-Junction	Left Carriageway Width (m)	Right Carriageway Width (m)	Kerbed Central Reserve Width (m)	Width for C-B traffic (m)	Visibility for C-B traffic (m)
(ALL)	6.00	6.00	0.00	2.20	0.00

T-Junction Minors

T-Junction	B-C Lane Width (m)	B-A Lane Width (m)	B-C Visibility (m)	B-A Visibility (m)
(ALL)	2.20	2.20	0.00	0.00

T-Junction Slope Intercept

T-Junction	BCIntercept (PCU/hr)	BC-aBSlope	BC-aCSlope	BAIntercept (PCU/hr)	BA-aBSlope	BA-aCSlope	BA-cASlope	BA-cBSlope	CBIntercept (PCU/hr)	CB-aBSlope	CB-aCSlope
(ALL)	574	0.09	0.22	440	0.08	0.20	0.13	0.29	574	0.22	0.22

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	10	136	30
	2	26	0	52	46
	3	347	18	0	20
	4	94	93	34	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	D/1	Dx/1	#FF0000
	2	(untitled)	A/1, A/2	Ax/1, Ax/2	#00FF00
	3	(untitled)	B/1	Bx/1	#FFFF00
	4	(untitled)	C/1	Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		4	1	C/1, Dx/1	Normal	94
	2		4	2	C/1, Ax/1	Normal	47
	3		4	3	C/1, Bx/1	Normal	34
	5		1	2	D/1, Ax/1	Normal	5
	6		1	3	D/1, Bx/1	Normal	136
	7		1	4	D/1, Cx/1	Normal	30
	9		2	3	A/1, Bx/1	Normal	52
	10		2	4	A/1, Cx/1	Normal	46
	11		3	1	B/1, Dx/1	Normal	347
	12		3	2	B/1, Ax/1	Normal	9
	13		3	4	B/1, Cx/1	Normal	20
	14		2	1	A/2, Dx/1	Normal	26
	15		4	2	C/1, Ax/2	Normal	47
	16		1	2	D/1, Ax/2	Normal	5
	17		3	2	B/1, Ax/2	Normal	9

Local OD Matrix - Local Matrix: 3

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
3		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	59	293
	2	81	0	99
	3	167	56	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
3	1		3A1/1	3Ax/1	#FF0000
	2		3B1/1	3Bx/1	#00FF00
	3		3C1/1	3Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
3	1		3	2	3C1/1, 3Bx/1	Normal	56
	2		3	1	3C1/1, 3Ax/1	Normal	167
	3		1	2	3A1/1, 3Bx/1	Normal	59
	4		1	3	3A1/1, 3Cx/1	Normal	293
	5		2	3	3B1/1, 3Cx/1	Normal	99
	6		2	1	3B1/1, 3Ax/1	Normal	81

Local OD Matrix - Local Matrix: 6

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
6		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	21	142
	2	12	0	12
	3	302	30	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
6	1		4A1/1	4Ax/1	#FF0000
	2		4B1/1	4Bx/1	#00FF00
	3		4C1/1	4Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
6	1		3	2	4C1/1, 4Bx/1	Normal	30
	2		3	1	4C1/1, 4Ax/1	Normal	302
	3		1	2	4A1/1, 4Bx/1	Normal	21
	4		1	3	4A1/1, 4Cx/1	Normal	142
	5		2	3	4B1/1, 4Cx/1	Normal	12
	6		2	1	4B1/1, 4Ax/1	Normal	12

Local OD Matrix - Local Matrix: 7

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
7		✓	✓	Lane Balancing			✓			✓	1.25				

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	3	151
	2	3	0	3
	3	298	4	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
7	1		7A1/1	7Ax/1	#FF0000
	2		7B1/1	7Bx/1	#00FF00
	3		7C1/1	7Cx/1	#0000FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
7	1		3	2	7C1/1, 7Bx/1	Normal	4
	2		3	1	7C1/1, 7Ax/1	Normal	298
	3		1	2	7A1/1, 7Bx/1	Normal	3
	4		1	3	7A1/1, 7Cx/1	Normal	151
	5		2	3	7B1/1, 7Cx/1	Normal	3
	6		2	1	7B1/1, 7Ax/1	Normal	3

Signal Timings

Network Default: 100s cycle time; 100 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		3	NetworkDefault	100	60

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, B	1	1	100
	2	C	1	1	100
	3	D	1	1	100
	4	E	1	1	100
	5	F, G, H, I	1	1	100
	6	A	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	15, 35, 55, 75, 95	60	
	2	(untitled)	Single	1, 2, 3, 5, 4	15, 35, 55, 75, 95	60	
	3	(untitled)	Single	1, 2, 4, 3, 5	5, 40, 58, 80, 92	60	
	4	(untitled)	Single	1, 2, 4, 5, 3	15, 35, 55, 75, 95	60	
	5	(untitled)	Single	1, 2, 5, 3, 4	15, 35, 55, 75, 95	60	
	6	(untitled)	Single	1, 2, 5, 4, 3	15, 35, 55, 75, 95	60	
	7	(untitled)	Single	1, 3, 2, 4, 5	15, 35, 55, 75, 95	60	
	8	(untitled)	Single	1, 3, 2, 5, 4	15, 35, 55, 75, 95	60	
	9	(untitled)	Single	1, 3, 4, 2, 5	15, 35, 55, 75, 95	60	

Intergreen Matrix for Controller Stream 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5	5	
	B			5	5	5			5	5
	C	5	5		5	5	5	5	5	5
	D	5	5	5		5	5	5	5	5
	E	5	5	5	5		5	5	5	5
	F	5		5	5	5				
	G	5		5	5	5				
	H	5	5	5	5	5				
	I		5	5	5	5				

Banned Stage transitions for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1						
	2						
	3						
	4						
	5						
	6						

Interstage Matrix for Controller Stream 1

		To					
		1	2	3	4	5	6
From	1	0	5	5	5	5	0
	2	5	0	5	5	5	5
	3	5	5	0	5	5	5
	4	5	5	5	0	5	5
	5	5	5	5	5	0	5
	6	0	5	5	5	5	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,B	97	5	8	1	7
	2	✓	2	C	10	40	30	1	7
	3	✓	4	E	45	58	13	1	7
	4	✓	3	D	63	80	17	1	7
	5	✓	5	F,G,H,I	85	92	7	1	7

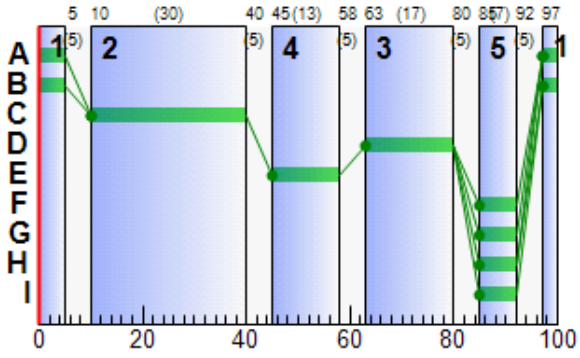
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	5	8
	B	1	✓	97	5	8
	C	1	✓	10	40	30
	D	1	✓	63	80	17
	E	1	✓	45	58	13
	F	1	✓	85	92	7
	G	1	✓	85	92	7
	H	1	✓	85	92	7
	I	1	✓	85	92	7

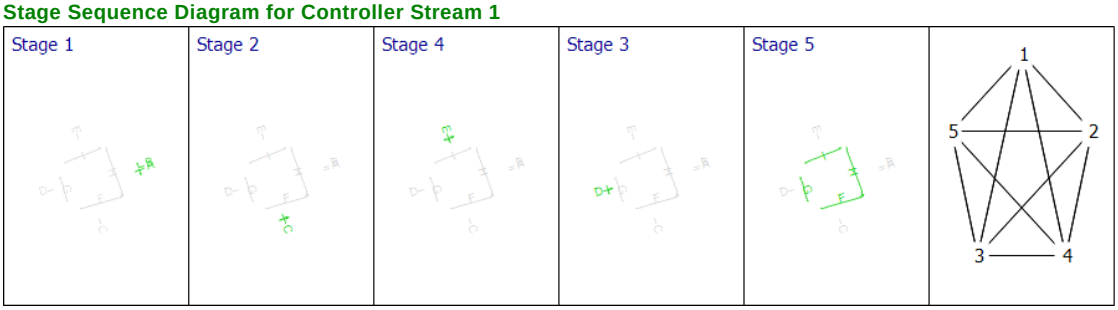
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	97	5	8
A	2	1	1	B	97	5	8
B	1	1	1	C	10	40	30
C	1	1	1	D	63	80	17
D	1	1	1	E	45	58	13

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (€ per hr)	Intergreen broken penalty (€ per hr)	Stage constraint broken penalty (€ per hr)	Cost of controller stream penalties (€ per hr)
16:00-17:00	1	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

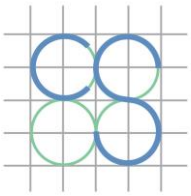
			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUE	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	M e of qu (P
A	1	(untitled)	1	1	A	98	1800	8	0.00	60	49	68.76	60.28	110.52	3.06	2.
	2		1	1	B	26	1800	8	7.00	16	461	52.69	44.21	92.92	0.68	0.
Ax	1	(untitled)				61	Unrestricted	100	72.00	0	Unrestricted	40.68	0.00	0.00	0.00	
	2					61	Unrestricted	100	72.00	0	Unrestricted	40.37	0.00	0.00	0.00	
B	1	(untitled)	1	1	C	385	1800	30	0.00	69	30	45.83	37.35	92.52	10.06	8.
Bx	1	(untitled)				222	Unrestricted	100	24.00	0	Unrestricted	39.06	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	222	1800	17	0.00	69	31	58.61	50.13	103.11	6.46	5.
Cx	1	(untitled)				96	Unrestricted	100	37.00	0	Unrestricted	40.15	0.00	0.00	0.00	
D	1	(untitled)	1	1	E	176	1800	13	0.00	70	29	65.41	56.92	108.93	5.42	4.
Dx	1	(untitled)				467	Unrestricted	100	0.00	0	Unrestricted	40.85	0.00	0.00	0.00	
3Ax	1					248	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
3Bx	1					115	Unrestricted	100	0.00	0	Unrestricted	13.50	0.00	0.00	0.00	
3Cx	1					392	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
4Ax	1					314	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
4Bx	1					51	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
4Cx	1					154	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
7Ax	1					301	Unrestricted	100	0.00	0	Unrestricted	17.23	0.00	0.00	0.00	
7Bx	1					7	Unrestricted	100	100.00	0	Unrestricted	13.50	0.00	0.00	0.00	
7Cx	1					154	Unrestricted	100	0.00	0	Unrestricted	15.62	0.00	0.00	0.00	
3A1	1		3			352	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
3B1	1		3			180	413	100	0.00	44	106	22.97	15.22	0.00	0.76	
3C1	1		3			223	1084	100	0.00	21	337	13.21	4.17	0.00	0.26	
4A1	1		6			163	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
4B1	1		6			24	434	100	100.00	6	1527	16.48	8.74	0.00	0.06	
4C1	1		6			332	1485	100	0.00	22	303	12.15	3.12	0.00	0.29	
7A1	1		7			154	Unrestricted	100	0.00	0	Unrestricted	9.04	0.00	0.00	0.00	
7B1	1		7			6	439	100	100.00	1	6489	16.02	8.27	0.00	0.01	
7C1	1		7			302	1746	100	0.00	17	420	11.52	2.49	0.00	0.21	

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (€ per hr)	Weighted cost of stops (€ per hr)	Excess queue penalty (€ per hr)	Performance Index (€ per hr)
Normal traffic	731.65	37.80	19.35	9.11	4.31	190.50	11.40	0.00	201.90
Bus									
Tram									
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	731.65	37.80	19.35	9.11	4.31	190.50	11.40	0.00	201.90

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

Appendix E: Emergency Management Plan



CS CONSULTING

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MEMORANDUM

Date:	01.06.2022
Re:	Q003 Belgard – Emergency Access from the R113 Belgard Road
Applicant Name:	Ravensbrook Limited
Development Address:	Belgard Square East, Belgard Road, and Blessington Road, Tallaght, Dublin 24
Development Description:	310no. residential units and 2289m^2 commercial space.

1.0 Introduction

Following discussion with South Dublin County Council on Thursday 9th September 2021 regarding roads and traffic items within the proposed development. South Dublin County Council raised concerns regarding implementation of an emergency access junction on Belgard Road as proposed during pre-application meetings. CS Consulting on behalf of the applicant Ravensbrook Limited outline an emergency access route to and from the development site at Belgard Square East, Tallaght, Dublin 24. This emergency access route referred to in this proposal is only for use under emergency conditions and to facilitate infrequent access at the discretion of the development management company.

2.0 Emergency Access Junction

The subject development layout presents an opportunity for a secondary access which will at all times be available for use by emergency vehicles and which may function as a vehicular access for general traffic in a situation in which the primary vehicle access is not suitable for use.

It is proposed that the emergency access junction shall be made available for use under the following situations;

- In case of vehicular accidents or obstruction of vehicular traffic on Belgard Square East or Blessington Road;

- In case of obstruction of the primary vehicular entrance to the subject development on Belgard Square East;
- In case of emergency call-out to the subject development site (if required);
- In case of emergency call-out to location not in the subject development site.

2.1 Traffic Accident

The provision of a secondary emergency access allows for the diversion of vehicular trips through the subject development site in case of a traffic accident on Belgard Square East or Blessington Road. Should such a situation occur, SDCC may make the management company aware of such and demountable bollards will be removed, allowing through traffic to travel through the subject development.

2.2 Emergency Call-Out to Development Site

The provision of a secondary emergency access allows for alternative access for emergency vehicles to the subject development site which may result in reduced response times by emergency services. Should such a situation occur, the proposed demountable bollards shall be removed by the emergency services.

2.3 Emergency Call-Out to Location <u>not</u> in the Subject Development Site

The provision of a secondary emergency access facilitates an alternative route for emergency vehicles to travel through the site to the scene of an accident/emergency. The provision of alternative access through the subject development site allows emergency vehicles to bypass the Belgard Square East / Blessington Road junction in the case of an accident or significant traffic delay at the Belgard Square East / Blessington Road junction.

3.0 Expected Emergency Vehicle Call-out

CS Consulting have reviewed the probability of a call-out on a given day based on available recent information.

Upon review of the review data below, considering the number of emergency callouts per household in Dublin in a given year and the number of units permitted by the scheme.

We note the following;

<u>Total Emergency Ambulance Calls source - HSE performance report (2018)</u>

- National 321,379
- Dublin 78,606

- National Excl. Dublin 242,773

Total Fire Brigade Calls (incl. false alarms) source - Particulars of Fires attended by brigades (2017)

- National 28,896
- Dublin 11,374
- National excl. Dublin 17,522
- Totalling emergency call outs in Dublin = 78,606+11,374 = 89,980
- Total no. households within Dublin = 422,182 (census Data 2016)
  - Likelihood of Emergency call to a household in Dublin on an annual basis = 21.33%
  - Likelihood of an Emergency call to a household in Dublin on a daily basis = 0.058%

4.0 Maintenance

In order to ensure that the proposed demountable bollards are in working condition at all times a regular inspection and maintenance regime shall be undertaken. This shall be the responsibility of the subject development management company. The proposed demountable bollards shall be removed and inspected at intervals not exceeding 1 month. Maintenance shall be undertaken promptly when required and the bollards shall not be left in place during periods where they do not operate satisfactorily.