Waterman Moylan
Engineering Consultants

Traffic and Transport Assessment

Oldtown Planning: Phase 5

March 2022

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This document has been prepared and checked in accordance with
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Comments

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1. Introduction

1.1 Background

This Traffic and Transportation Assessment (TTA) has been prepared by Waterman Moylan as part of the documentation in support of Planning Application 5 for a proposed mixed-use residential development at Oldtown, Swords, Co. Dublin, to be submitted to An Bord Pleanála for a proposed Strategic Housing Development (SHD).

The proposed planning application for Phase 5 of the development forms part of the Oldtown and Mooretown lands, northwest of Swords, which were subject to the now expired Oldtown-Mooretown Local Area Plan (LAP) adopted by Fingal County Council in October 2010.

The proposed development is for 377 No. Units, comprising of 173 No. Houses, 134 NO. Apartments and 70 No. Apartment/Duplex units on a total net development area o f7.80 HA, as per the schedule of accommodation overleaf. A 519sqm Creche is also proposed.

The development of Oldtown-Mooretown LAP lands commenced in 2011 and is expected to be complete by 2028.

The overall Oldtown-Mooretown development, according to the Oldtown-Mooretown LAP, will comprise of approximately 2,300 dwellings units, 7,510 sqm of commercial floorspace and a 1,624-pupil primary and post-primary school on a 111 hectares site.

1.2 Scope

This TTA is a comprehensive review of all the potential transport impacts of the overall Oldtown-Mooretown LAP development, including a detailed assessment of the existing and future transportation systems and the impact of the overall LAP lands on the surrounding environment and transportation network.

1.3 Standards

This Traffic and Transport Assessment has been prepared in accordance with the requirements of the Traffic and Transport Assessment Guidelines published by National Roads Authority in May 2014.

1.4 Threshold for Transport Assessment

Section 2.1 of the Traffic and Transport Assessment Guidelines (May 2014) requires submission of a Transport Assessment where a proposed development meets one or more of the following criteria:

1- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road;

2- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive;

3- Residential development in excess of 200 dwellings;

4- Retail and leisure development in excess of 1,000sqm;

5- Office, education and hospital development in excess of 2,500sqm;

6- Industrial development in excess of 5,000sqm;

7- Distribution and warehousing in excess of 10,000sqm.

In the case of the subject development, some thresholds are exceeded.

1.5 Contents of the Transport Assessment

In accordance with Section 3.3 of the Traffic and Transport Assessment Guidelines (May 2014), the contents of this TTA include:

- Description of the existing and proposed traffic/transportation conditions including information on the current traffic, critical junctions, pedestrians, cycle and public transport facilities;
- A description of the proposed development;
- The traffic and transportation implications of the development including consideration of trip generation/attraction, mode choice and trip distribution;
- Description and analysis of under construction, permitted and future developments in the area;
- The time periods applicable to the TTA;
- The impact of the development on the surrounding road network including analysis of junction's capacity;
- Review of the historical data related to road safety;
- Description of car and cycle parking requirements and proposals.

1.6 Location of Development

The area of the Oldtown-Mooretown LAP lands is approximately 111 hectares. The lands are located at the western development edge of Swords, within the catchment of the Broadmeadow River.

The Oldtown-Mooretown lands are divided by Rathbeale Road, with Oldtown lands to the north (circa 50 ha) and Mooretown to the south (circa 61 ha). The subject application (circa 8.25 ha), which forms Planning 5 of the Oldtown development, is located in the north-west quarter of the Oldtown Lands. The location is shown in Figure 1 below and in detail on Waterman Moylan Drg No. 17-144-P1000 accompanying the documentation package.

1.7 Program

It is expected that construction of the proposed Oldtown Planning 5 development will commence in 2022 for completion in 2025.

1.8 Assessment Years

Base Year	:	2022
Opening Year (With / Without Development)	:	2025
Opening Year + 5 Years Forecast (With / Without Development)	:	2030
Opening Year + 15 Years Forecast (With / Without Development):		2040

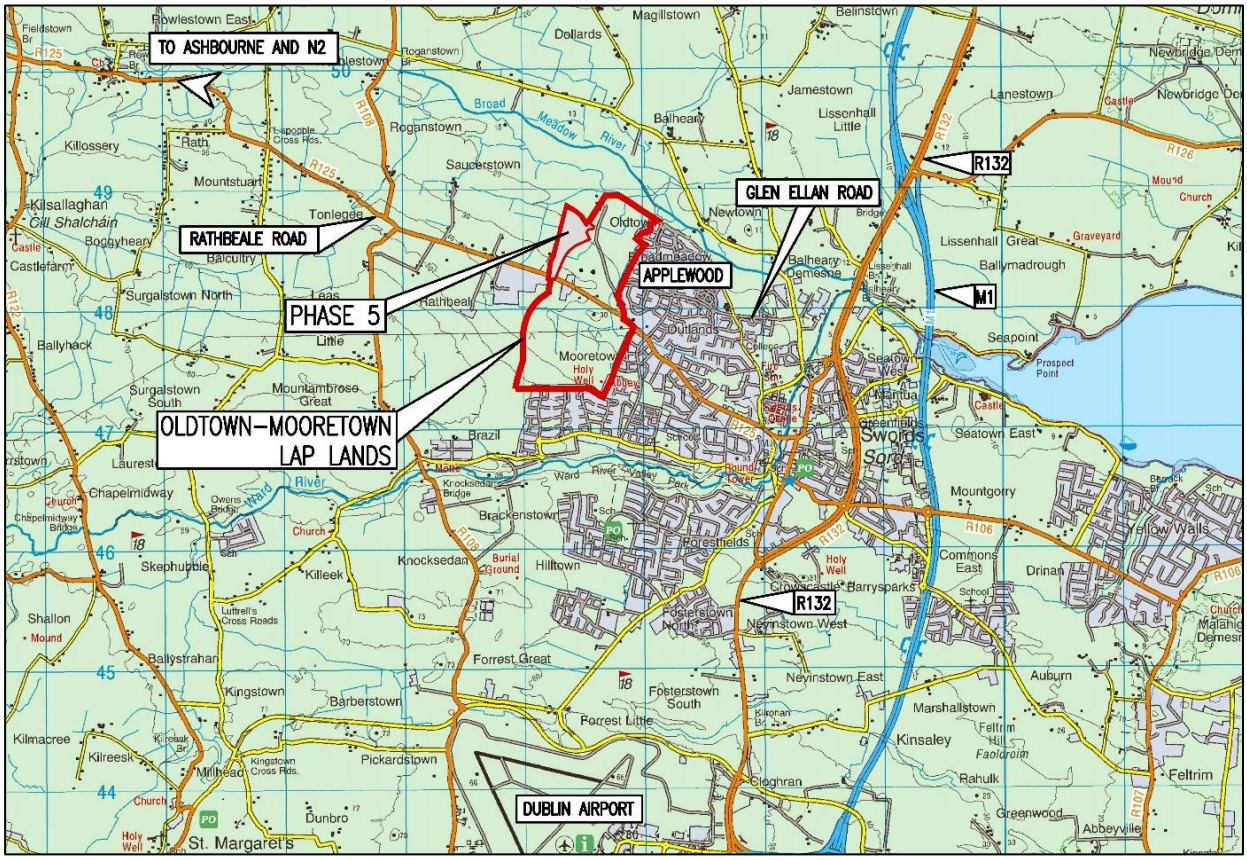


Figure 1 | *Oldtown Planning 05 - Site Location.*

1.9 Methodology

The methodology for the preparation of this Traffic and Transport Assessment included: -

- Descriptions of the proposed, future and overall developments in the Oldtown-Mooretown LAP.
- Descriptions of the surrounding receiving environment including roads and junctions, public transport, cycle facilities and pedestrian facilities.
- Description of existing local travel characteristics including traffic survey and modal split.
- Description of proposed transportation improvements to local roads, junctions, public transport, cycle and pedestrian facilities.
- Review of local travel characteristics and determination of future modal split.
- Calculation of trip generation and distribution for under construction, permitted, proposed and future developments in the Oldtown – Mooretown LAP area.
- Determination of future traffic movements in 2025, 2030 and 2040.
- Determination of transportation impact on roads and junctions.

2. Policy Framework

2.1 Fingal Development Plan (2017 – 2023)

The Fingal Development Plan (2017 – 2023) sets out the authority's policies and objectives for the development of the County for the period of 2017 to 2023. The Plan seeks to develop and improve in a sustainable manner the social, economic, cultural and environments assets of the county. In the context of the subject development site and the proposed residential scheme a number of most relevant policies include:

2.1.1 Strategic Policy

"Seek the development of a high quality public transport system throughout the County and linking to adjoining counties, including the development of the indicative route for New Metro North and Light Rail Corridor, improvements to railway infrastructure including the DART Expansion Programme, Quality Bus Corridors (QBCs) and Bus Rapid Transit (BRT) systems, together with enhanced facilities for walking and cycling."

"Promote, improve and develop a well-connected national, regional and local road and public transport infrastructure system, geared to meet the needs of the County and the Region, and providing for all road users, prioritising walking, cycling and public transport."

2.1.2 Integrated Land Use and Transportation

"***Objective MT05***: *Integrate land use with transportation by allowing higher density development along higher capacity public transport corridors."*

2.1.3 Parking

*"**Objective MT08**: Control on-street parking in the interests of the viability, vitality and amenity of commercial centres by maximising the supply of short stay parking for shoppers, while providing appropriate levels of long-term parking within a reasonable distance for employees."*

2.1.4 Walking and Cycling

*"**Objective MT13**: Promote walking and cycling as efficient, health, and environmentally-friendly modes of transport by securing the development of a network of direct, comfortable, convenient and safe cycle routes and footpaths, particularly in urban areas."*

*"**Objective MT19**: Design roads and promote the design of roads, including cycle infrastructure, in line with the Principals of Sustainable Safety in a manner consistent with the National Cycle Manual and the Design Manual for Urban Roads and Streets."*

*"**Objective MT22**: Improve pedestrian and cycle connectivity to stations and other public transport interchanges."*

2.1.5 Traffic Calming

*"**Objective MT37**: Implement traffic calming on particular roads and in appropriate areas of the County, especially residential areas, to reduce vehicle speeds in the interests of road safety and residential amenity. Ensure that where appropriate, traffic calming is included as a pre-condition as part of the development of all new estates or extensions to existing estates."*

2.1.6 Road Construction and Improvement Measures

*"**Objective MT40**: Implement a programme of road construction and improvement works closely integrated with existing and planned land uses, taking into account both car and non-car modes of transport whilst promoting road safety as a high priority. Major road construction and improvement works will include an appraisal of environmental impacts."*

*"**Objective MT41**: Seek to implement the Road Improvement Schemes indicated in Table 7.1 within the Plan period, subject to assessment against the criteria ser out in Section 5.8.3 of the NTA Transport Strategy for the GDA, where appropriate and where resources permit. Reserve the corridor of the proposed road improvements free of development".*

R125 Rathbeale Road Improvements and Swords Western Distributor Road are included in the aforementioned Table 7.1 within the Plan.

2.1.7 Green Infrastructure and Planning

*"**Objective GI18**: Require all Local Area Plans to protect, enhance, provide and manage green infrastructure in an integrated and coherent manner addressing the five GI themes set out in the Development Plan – Biodiversity, Parks, Open Space and Recreation, Sustainable Water Management, Archaeological and Architectural Heritage, and Landscape."*

*"**Objective GI20**: Require all new development to contribute to the protection and enhancement of existing green infrastructure and the delivery of new green infrastructure, as appropriate."*

2.1.8 Local Area Plans and Masterplans

*"**Objective SWORDS 27**: Prepare and/or implement the following Local Area Plans and Masterplans during the lifetime of this Plan:*

- *Oldtown / Mooretown Local Area Plan."*

The proposed development falls within the Oldtown - Mooretown Local Area Plan lands.

2.2 Oldtown - Mooretown Local Area Plan (2010 - 2016)

The Oldtown - Mooretown Local Area Plan, published by the Planning Department of Fingal County Council in 2010 sets out the development strategy to develop the Oldtown-Mooretown lands in a phased, coordinated and sustainable manner for the period of 2010 to 2016.

On 28th July 2015 an extension of duration of the LAP's life has been approved for an additional period of 5 years, from the 13th of July 2015 up to the 12th of July 2020.

2.2.1 Purpose of Local Area Plan

"*The Oldtown-Mooretown LAP sets out the optimum development strategy for the proper planning and sustainable development of the plan lands, and addresses the following elements:*

- *Phased and integrated development of LAP lands, primarily for residential use, with a supporting level of mixed uses in Local Centres to serve the needs of the area and support the development of a sustainable community;*
- *Creation of a permeable and legible movement network for all modes of transport linking the site internally and with the surrounding area;*

- *Provision of high quality recreational open space and amenity facilities to meet active and passive recreational needs of the expanding population in this area;*
- *Increase in community facilities and health care facilities, in particular provision of additional schools;*
- *Enhancement and preservation of existing archaeological sites and increase in appropriate usage and public acknowledgement of such sites;*
- *Enhancement and protection of existing environmental features within the plan lands and Broadmeadow Linear Park north of the plan lands*."

2.2.2 Strategic Vision

"*The Oldtown-Mooretown lands will be developed in a coordinated, sustainable way, as a unique urban extension connected to the existing town of Swords – a place with its own character and identity, where people can live, work, recreate and access various local services within an accessible area and be part of a sustainable community*."

2.2.3 Movement Strategy and Transportation Infrastructure

"*In order to facilitate development of the LAP lands, a tiered and phased approach to the improvement of the road network is required. The following elements are necessary:*

- *Development of a number of new roads/road links – in particular provision of the Western Distributor Link Road (WDLR) and the Inner Ward River Valley Crossing;*
- *Enhancement of existing junctions and roads external to the lands;*
- *Redesign of Glen Ellan Road as a main urban street within the lands and design of a main street within Mooretown lands;*
- *Provision of a quality bus route to transport those living in northwest Swords into the Town Centre;*
- *Provision of pedestrian and cyclist networks, associated with green corridors both within and into adjoining areas*."

2.2.4 Phasing Programme

"*Development of the LAP shall occur in 4 phases*."

The following is a list of road improvement works listed in the LAP for each phase. 1-4, and an update on each.

The Expired LAP Notes that Phase 1: Residential Development of approximately 800 units, representing circa 25% of the overall LAP development.

The following road network improvements shall be completed within Phase 1.

<u>Western Distributor Link Road (WDLR)</u>

1) 0.3 km of new single carriageway distributor road from Rathbeale Road to Glen Ellan Road Extension;
2) a signal-controlled junction including a pedestrian and cyclist crossing at the junction with Glen Ellan Road Extension;
3) a roundabout junction on the Rathbeale Road at the western edge of Oldtown-Mooretown lands.

4) a signal controlled toucan crossing for pedestrians and cyclists on Rathbeale Road a short distance east of the new roundabout with provision for connection northward and southward along Swords Western Distributor Link Road.

Update:

Road network improvement No. 1 has been constructed as part of the Oldtown Planning 01 development works.

Road network improvement No. 2 serves Oldtown Planning 02 area and is substantially complete by the applicant as part of the Glen Ellan Road Extension works.

Regarding road network improvements No. 3 and No. 4, it was agreed with FCC to replace the roundabout with a signalised junction. The pedestrian crossing was required in the event that the junction at this location was to be a roundabout. The crossing has been incorporated into the agreed WDLR / Rathbeale Road signalised junction.

This signalised junction will serve both Mooretown and Oldtown lands and was subject to a Part 8 planning application by FCC which was subject to a LIHAF funding.

This Part 8 planning application received approval in 2017. Works were approved for LIHAF funding and are now complete and open to the public.

<u>R125 Rathbeale Road</u>

5) R125 Rathbeale Road shall be upgraded to urban road standard with footpaths and cycle lanes from the new junction with the WDLR to the Cianlea estate.

6) a signal-controlled junction with right-turn lanes shall be provided at a new access into the Mooretown lands at the north-eastern corner.

7) a priority-controlled junction with right-turn lane at a new access into the Oldtown lands at the south-eastern corner shall be provide.

8) a signal-controlled junction with right-turn lanes at a new access into the north-western portion of the Mooretown lands shall be provided.

9) a signal-controlled toucan crossing for pedestrians and cyclists between the two public park areas on either side of Rathbeale Road approximately midway along the frontage of the LAP lands shall be provided.

Update:

All the road network improvements required for R125 Rathbeale Road were subject to the mentioned Part 8 planning application by FCC which are now complete and open to the public.

<u>Glen Ellan Road Extension/Street</u>

10) upgrade of Glen Ellan Road Extension to a Street, providing 4m wide footpaths and 2.5m wide off-road cycle tracks through local centre and 2m wide footpaths, 2m wide verges and 2.5m wide off-road cycle tracks elsewhere with 3m wide landscaped medians provided at 150m centres.

11) provide signal-controlled toucan crossing for pedestrians and cyclists at 3 locations along Glen Ellan Street to cater for pedestrians and cyclists.

Update:

The road network improvements No. 10 and No. 11 are within the Oldtown Planning 01 and Oldtown Planning 02. They were complete by the applicant and are now open to public.

Outside of Plan Lands

12) Rathbeale Road / Murrough Road junction upgrades.

13) Castlegrange Junction upgrades.

Update:

The required upgrades on Rathbeale Road / Murrough Road junction were also subject to the mentioned Pat 8 planning application by FCC and are now complete and open to the public.

The required upgrades on Castlegrange junction are remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Phase 2: Residential Development of approximately 1,000 units, representing circa 30% of the overall LAP development.

The following road network improvements shall be completed within Phase 2.

Western Distributor Link Road (WDLR)

14) development of Western Distributor Link Road from Rathbeale Road southwards to Brackenstown Road shall be developed, including provisions for cyclists and pedestrians.

15) upgrade of Brackenstown Road from Swords Manor to R108 Naul Road junction to urban single carriageway road standard with footpaths and cycle tracks.

16) provision of a pedestrian and cycle link along the eastern side of the R108 Naul Road from the junction with Brackenstown Road southward to the Knocksedan housing estate.

Update:

Road network improvements No. 14 have commenced under Planning Reference F12A/0270 and are currently substantially complete.

Road network improvements No. 15 and No. 16 are remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Internal Road Network

17) Local access roads and pedestrian/cyclist links shall be provided to open up the LAP lands development as per plan layout.

Update:

The internal road network and pedestrian / cycle links are being provided as the overall LAP development progresses. Footpaths and cycle tracks are being provided as part of Phase 1 along Glen Ellan Road, Oldtown Avenue, Mooretown Avenue and Rathbeale Road as far as the archaeological park. This will continue through Phase 2.

Outside of Plan Lands

18) upgrade 3 roundabouts on Glen Ellan Road to cyclist friendly roundabouts.

19) major upgrade and realignment of the junction of Glen Ellan Road with Balheray Road.

20) widen Balheary Road to 4 lanes between the Glen Ellan Road and Castlegrange junctions over 300m length. This will encroach on public park are to the east.

21) widen link road to 4 lanes between Castlegrange and R132 Estuary junctions.

22) major capacity improvement at the R132 Estuary junction (unless previously delivered by Metro North project).

Update:

Road network improvements No. 18 - 22 are remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Swords Western Quality Bus Corridor

23) bus priority measures within Oldtown LAP area and via Glen Ellan Road to Rathbeale Road junction.

24) bus lanes over 150m length on the northern approach to the junction of Rathbeale Road and Murrough Road.

Update:

Road network improvements No. 23 - 24 are remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Phase 3: Residential Development of approximately 600 units, representing circa 20% of the overall LAP development.

The LAP notes that the following road network improvements shall be completed within Phase 3.

Western Distributor Link Road (WDLR)

25) northern extension of road through lands at Oldtown adjoining this phase of development.

26) undertake remaining road network improvements/connections to complete Western Distributor Link Road south of Brackenstown/Naul Road junction, including its connection to Forrest Road.

Update:

The northern extension of WDLR is substantially complete as part of Oldtown Planning 03 development works.

Road network improvements No. 26 is remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Internal Road Network

27) local access roads and pedestrians/cyclist routes shall be provided as per plan layout.

Update:

The internal road network and pedestrian / cycle links are being provided as the overall LAP development progresses. Footpaths and cycle tracks are being provided as part of Phase 1 along Glen Ellan Road, Oldtown Avenue, Mooretown Avenue and Rathbeale Road as far as the archaeological park. This will continue through Phase 3.

Outside of Plan Lands

28) capacity improvement at the junction of R125 Rathbeale Road with Watery Lane shall be carried out.

29) capacity improvement at the junction of Watery Lane with Balheary Road shall be carried out.

30) Update:

Update:

Road network improvements No. 28 & No. 29 are remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Swords Western Quality Bus Corridor

31) the main elements of the 6km long QBC shall be developed during this phase.

32) a new link road from Brackenstown to Dublin Road at Swords Town Centre (Lord Mayor Link Road) shall be delivered in conjunction with the third phase of development.

Update:

Road network improvements No. 30 & No. 31 are remote from the site and not considered to be under the remit of the applicant, as detailed in the Engineering Assessment Report. This was agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022.

Phase 4: Residential Development of approximately 800 units, representing circa 25% of the overall LAP development.

The LAP notes that the following road network improvements shall be completed within Phase 4.

Western Distributor Link Road (WDLR)

33) northern extension of road through lands at Oldtown to the edge of the Broadmeadow Linear Park shall be provided (with provision in design for future extension into the Lissenhall development lands and for connection to the Swords Western Ring Road).

Update:

The northern extension of WDLR as far as Broadmeadow Linear Park is substantially complete as part of Oldtown Planning 03 development works.

Internal Road Network

34) local access roads and pedestrian/cyclist routes as per plan layout shall be provided.

Update:

The internal road network and pedestrian / cycle links are being provided as the overall LAP development progresses. Footpaths and cycle tracks are being provided as part of Phase 1 along Glen Ellan Road, Oldtown Avenue, Mooretown Avenue and Rathbeale Road as far as the archaeological park. This will continue through Phase 4.

3. Receiving Environment

3.1 Existing Roads and Junctions

3.1.1 Roads

The main existing roads currently serving the Oldtown-Mooretown LAP lands are the R125 Rathbeale Road and the Glen Ellan Road.

R125 Rathbeale Road bisects the Oldtown Mooretown LAP lands and forms the southern boundary of the Oldtown lands. This road connects Swords with Ashbourne to the west. The road links to the R135 Old Dublin Road just south of Ashbourne to the N2 at Interchange No 3, Fleenstown Little. R125 Rathbeale Road also provides a direct link from Oldtown towards the east to Swords Main Street at the junction between Bridge Street and Main Street.

The section of R125 Rathbeale Road fronting the Oldtown-Mooretown LAP lands was recently upgraded under a Part 8 planning application by FCC. The complete improvements comprised of the following:

- Upgrading of the Rathbeale Road from the Murrough Road junction to the junction with the Swords Western Distributor Road (approx. 1km), which includes re-grading and re-alignment of the carriageway and the provision of new high-quality pedestrian/cyclist facilities along the northern side of the Rathbeale Road and shared footpath/cycle facilities on the southern side of Rathbeale Road from Swords Western Distributor Road to the proposed toucan crossing at the proposed archaeological park.
- Provision of a new right hand turn lane on the western approach to the existing Murrough Road Junction.
- Provision of pedestrian/cycle ramp facilities to access Bunbury Gate Avenue located opposite No. 81 Bunbury Gate Avenue.
- Provision of junction for access for Local Authority Housing and for future access to third party lands.
- Provision of toucan crossing facilities at entrance to the proposed archaeological park.
- Provision of junction for secondary access from Mooretown Lands.
- Provision of a signalised junction at the intersection of the Rathbeale Road with the Swords Western Distributor Road.
- Provision of new/upgraded footpath facilities on both sides of the Rathbeale Road adjacent to Rathbeale Cottages.
- All miscellaneous ancillary works including street lighting, lining, road signage, drainage, utility diversions, ducting, landscaping, planting and additional road boundary treatments where required.

Glen Ellan Road is a 7.5m wide single carriageway road which is subject to a speed limit od 50kph with cycle lanes and footpaths running along both sides. Traveling in the easterly direction from the subject site, the Glen Ellan Road terminates at a four-armed signal-controlled junction with Balheray Road. Glen Ellan Road serves an existing school complex to the south of the Oldtown lands.

3.1.2 Junctions

The primary junctions which are part of the access route to Oldtown lands are: -

- **Junction A (Recently Constructed Signalised Crossroads)**: R125 Rathbeale Road / Swords Western Distributor Road (SWDR).

This junction was recently constructed under the Part 8 planning application by FCC mentioned above.

- **Junction B (Existing Four-armed Roundabout)**: Glen Ellan Road / Glen Ellan Road Western Extension.

The Western Extension works of Glen Ellan Road are substantially complete as part of Planning 1 and 2 of Oldtown lands.

- **Junction C (Existing Signalised Crossroads)**: R125 Rathbeale Road / Murrough Road.

As described, as part of the Part 8 planning application by FCC, a new right hand turn lane on the western approach of this junction was recently constructed.

The road layout in the area surrounding the proposed development site is illustrated in Figure 2.

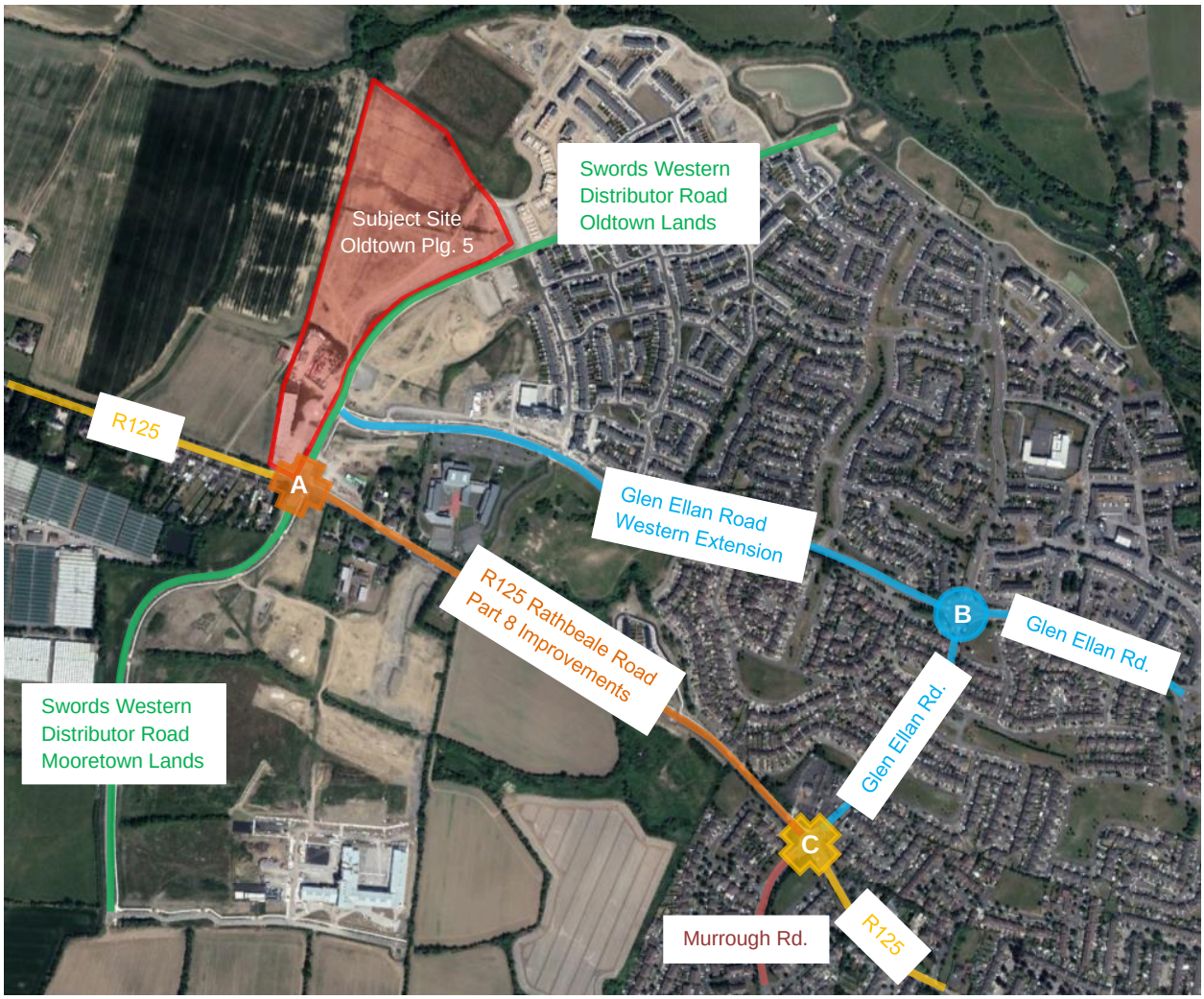


Figure 2 | *Existing Local Road Network.*

3.2 Existing Public Transport

3.2.1 Bus

The Oldtown LAP lands are currently served by various bus services which serve a number of bus stops distributed in the surrounding area. The closest bus stops in relation to the subject development site (Oldtown Planning 5) are located on R125 Rathbeale Road approximately 100m west of the south-western edge of the subject site. See Figure 3. The subject bus stops are currently served by 2 No. bus routes, being the Dublin Bus Route 41B and Go-Ahead Bus Route 197. A summary of the weekday frequencies of these routes is presented in Table 1.

Route	From	To	AM Frequency (07:00 to 09:00)	PM Frequency (17:00 to 19:00)
197	Ashbourne (Opp Pillo Hotel)	Swords, Airside Ind. Estate	2 services	2 services
	Swords, Airside Ind. Estate	Ashbourne (Opp Pillo Hotel)	2 services	2 services
41B	Rowlestown	Irish Life Mall	1 service	1 service
	Irish Life Mall	Rowlestown	1 service	1 service

***Table 1** | Bus Routes 197 and 41B - AM and PM Weekday Frequency.*

Approximately 700 metres east of the subject development site, there are two additional bus stops on Glen Ellan Road which are currently served by two Swords Express bus routes, Route 506 – operating from Edan Quay in Dublin only two times a day, both during the PM peak period (from 17:00 to 19:00), and Route 506X – operating from Broadmeadow, Miller's Glen to Dublin Eden Quay only three times a day, all during the AM peak period (from 07:00 to 09:00).

In addition to the cited bus stops, there are two other bus stops on Glen Ellan Road which are served by a number of additional bus routes. These are:

- **Dublin Bus Route 41**: from/to Lower Abbey Street in Dublin City Centre, this route operates every 15 to 20 minutes during the AM (07:00 to 09:00) and PM (17:00 to 19:00) peak periods.
- **Dublin Bus Route 41C**: from/to Abbey Street in Dublin City Centre, this route operates every 10 to 20 minutes during the AM and PM peak periods.
- **Swords Express Route 500**: to/from Edan Quay in Dublin City Centre, this route operates nine times during the AM peak period and six times during the PM peak period. This equates to approximately a bus running every 13 minutes in the morning and a bus running every 20 minutes in the evening.
- **Swords Express Route 503**: this route operates five times per day, three times in the AM peak period towards Marion Square in Dublin City Centre and two times in the PM peak period on the opposite direction – from Marion Square.
- **Swords Express Route 507**: this route operates three times per day, two times in the AM peak period (07:00 to 09:00) towards Eden Quay in Dublin City Centre and one time in the PM peak (17:00 to 19:00) on the opposite direction.
- **Swords Express Route 500X**: this route operates three times in the AM peak period (07:00 to 09:00) towards Eden Quay in Dublin City Centre and four times in the PM peak (17:00 to 19:00) on the opposite direction.

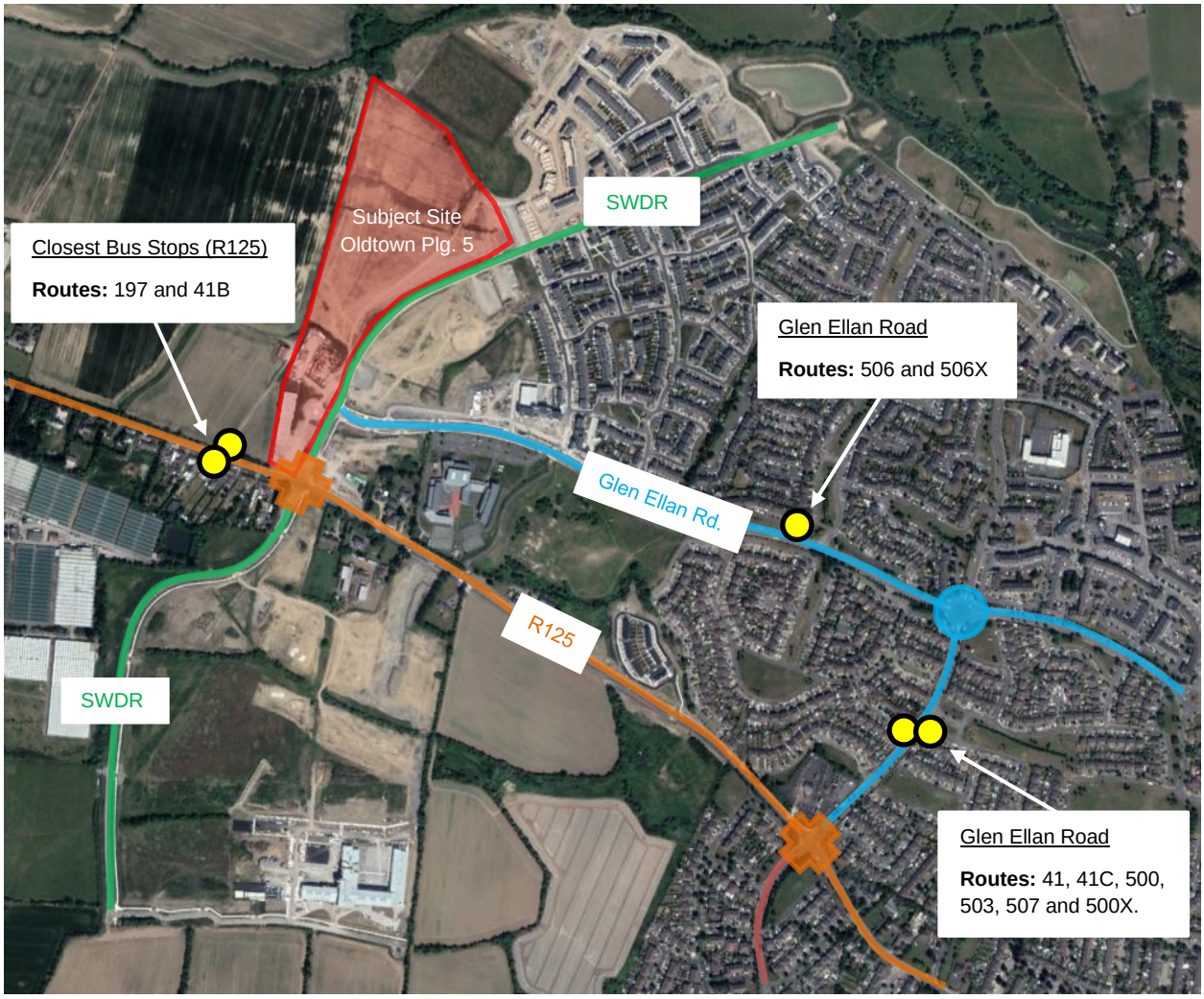


Figure 3 | *Location Map for Subject Site and Nearby Bus Stops and Routes.*

Based on the information provided above, it can be assured that the Oldtown lands are currently well served by bus, with a high frequency of buses passing the surrounding area during both morning and evening peak periods.

3.2.2 Car Sharing (GoCar)

The closest GoCar vehicle is located in the car park at Braeburn Terrace, Applewood, approximately 1.5km (18-minute walk) east from the subject development site.

One vehicle is provided at the Braeburn Terrace station.

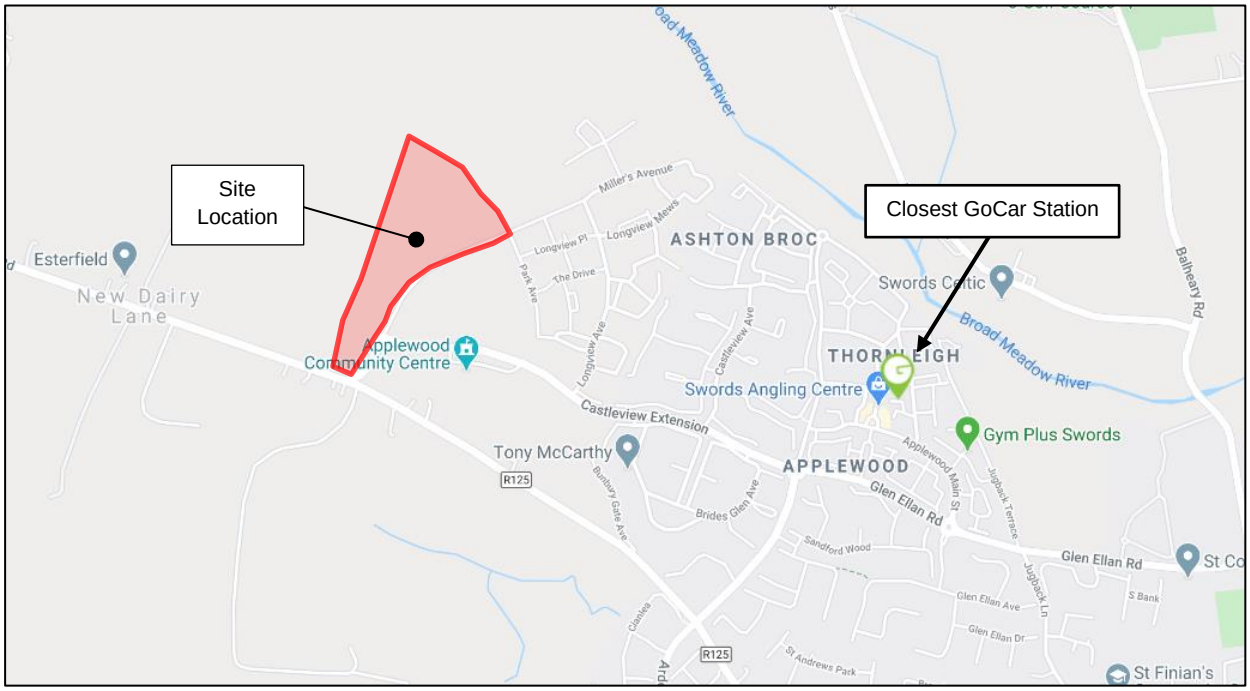


Figure 4 *| Location of Closest GoCar Station (Source: www.gocar.ie)*

3.3 Existing Pedestrian Facilities

The existing pedestrian facilities in the surrounding area comprise an inter-connected network of footways linking the various neighbourhoods to each other, to the existing schools, to the local bus stops, to parks and to the surrounding public network.

Glen Ellan Road (and extension) and the associated development in the Applewood area are provided with a minimum of 1.5m wide footpaths on each side of the road.

As part of the development works that are now complete on the R125 Rathbeale Road within the Oldtown-Mooretown LAP lands, footpaths have been constructed along both sides of the carriageway from the new signal-controlled junction with Swords Western Distributor Road to the eastern edge of the LAP lands.

See Waterman Moylan Drawing 17-144-P1002 for the pedestrian routes.

3.4 Existing Cycle Infrastructure

Cyclists can benefit from the provision of dedicated cycle lanes along both sides of the carriageway on Glen Ellan Road (and extension) for the majority of its length (See Figure 5). These cycle lanes are generally separate from the carriageway by a grass verge, except for a small portion of the road extension section which comprises a cycle track immediately adjacent to the carriageway along the northern side.

As part of the development works that are now complete on the R125 Rathbeale Road within the Oldtown-Mooretown LAP lands, cycle lanes have been constructed along both sides of the carriageway from the new signal-controlled junction with Swords Western Distributor Road to the eastern edge of the LAP lands.

These road upgrade works were subject to a Part 8 planning application by FCC which are now complete and open to the public.

See Waterman Moylan Drawing 17-144-P1003 for the nearby cycle routes.

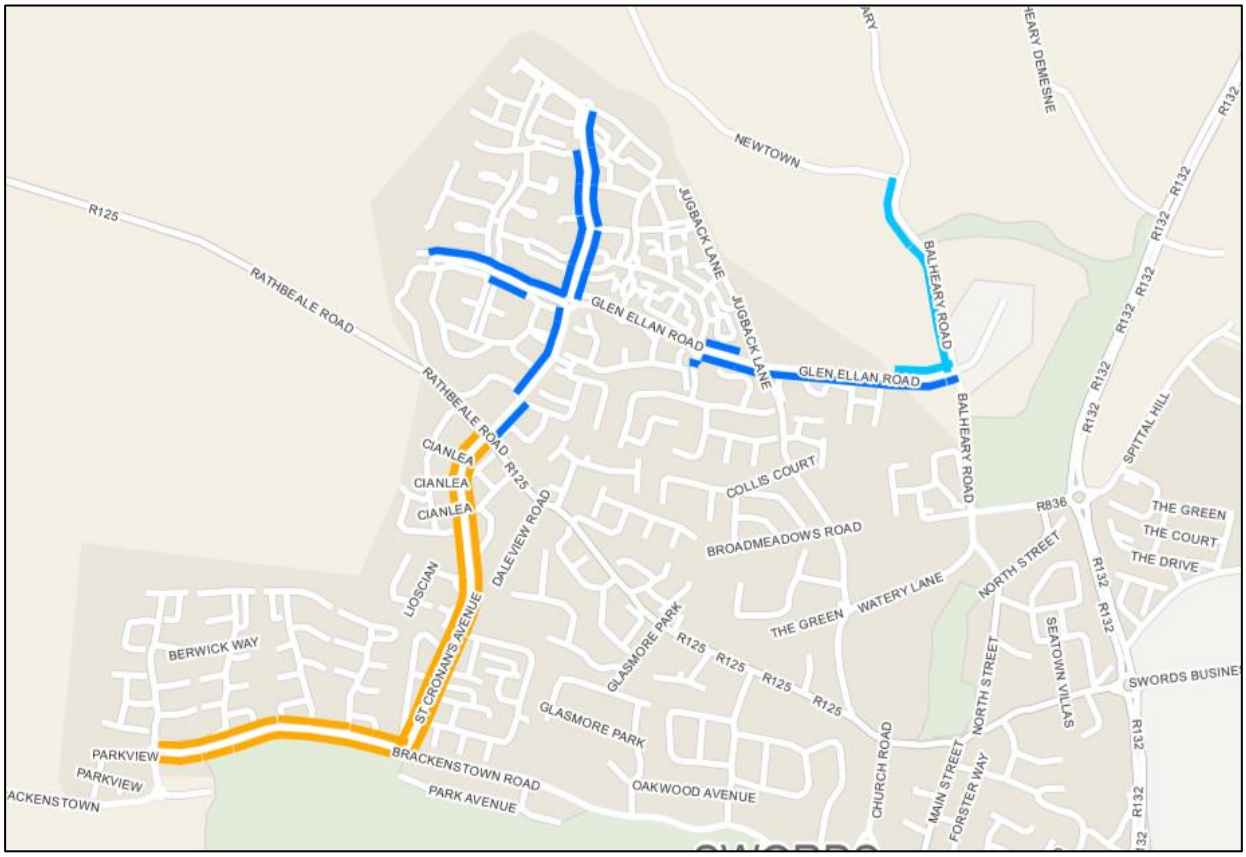


Figure 5 | *Existing Nearby Cycle Infrastructure. (Source: NTA: GDA Existing Cycle Network)*

4. Transportation Improvements

4.1 Roads

4.1.1 Oldtown-Mooretown LAP Road Improvements

All the road network improvements required as part of the Oldtown-Mooretown Local Area Plan, both within and outside the LAP boundaries, have been presented earlier in Section 2.2 of this report. These road network improvements include:

- Development of a number of new roads/road links – in particular provision of the Swords Western Distributor Road (SWDR) and the Inner Ward River Valley Crossing;
- Enhancement of existing junctions and roads external to the lands;
- Redesign of Glen Ellan Road as a main urban street within the lands and design of a main street within Mooretown lands;
- Provision of a quality bus route to transport those living in northwest Swords into the Town Centre;
- Provision of pedestrian and cyclist networks, associated with green corridors both within and into adjoining areas

At the time of writing this report, the SWDR is substantially complete within the Oldtown lands. These development works were undertaken as part of the previous phases of Oldtown.

The road upgrades along the R125 Rathbeale Road, both within and outside the LAP boundaries, were subject to a Part 8 planning application by FCC. This planning application received approval in 2017. Works have been approved for LIHAF funding and are now complete and open to the public.

The Glen Ellan Road Extension works are complete as part of the previous phases of Oldtown.

The scope, extent and timing of the works related to the Swords Quality Bus Corridor are to be agreed with Fingal County Council.

4.2 Public Transport

4.2.1 Bus Connects

The Bus Connects project currently being promoted by the National Transport Authority aims to deliver a much-enhanced bus service to the Greater Dublin Area (GDA). The routes proposed to directly serve the proposed development site are the **City Bound Route 22** and the **Local Route 197.** See Figure 6 – extracted from Bus Connects Swords Area Routes Map. A summary of the frequency of the Route 22 is shown in Table 2. Frequency of Route 197 will remain as it current is – Refer to Table 1 above.

From Figure 6, it will be seen that Bus Connects project will provide 4 No. additional routes on the surrounding area, within reasonable walking distance, which could also be used by the proposed development's residents. These additional routes are **Branch Route A4**, **Local Route L89**, **Peak-time Route X79** and **Peak-time Route X84**. A summary of the frequency of these additional routes are also shown in Table 2.

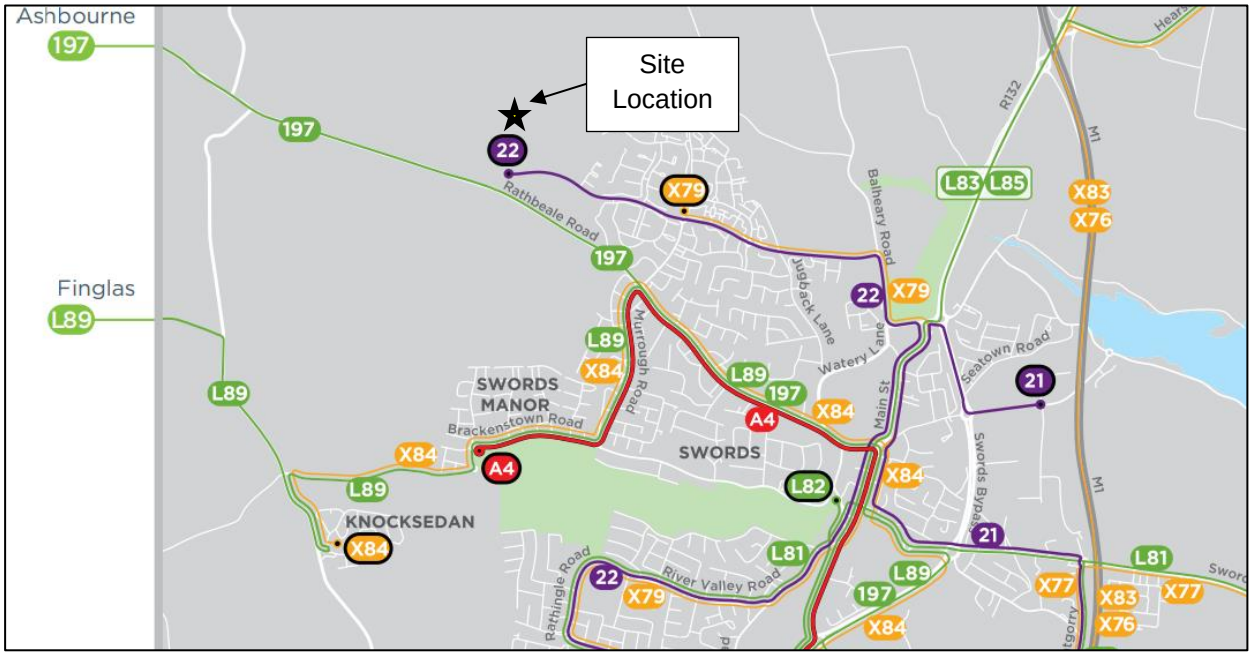


Figure 6 | *Bus Connects Swords Routes Map.*

Weekday Frequency					
Route	Before 07:00	07:00 to 09:00	09:00 to 15:00	15:00 to 18:00	After 18:00
22	15 to 30 min	15 min	15 min	15 min	15 to 30 min
A4	15 to 30 min	12 min	12 min	12 min	12 to 30 min
L89	-	60 min	60 to 120 min	60 min	60 to 120 min
X79	-	20 min (7h to 8h)	-	20 min (17h to 18h)	-
X84	-	20 min (8h to 9h)	-	20 min (17h to 18h)	-
Saturday Frequency					
Route	Before 07:00	07:00 to 09:00	09:00 to 15:00	15:00 to 18:00	After 18:00
22	20 min	15 to 20 min	15 min	15 min	20 to 30 min
A4	20 min	15 to 20 min	15 min	15 min	15 to 30 min
L89	-	60 to 120 min	60 to 120 min	60 to 120 min	60 to 120 min
X79	-	-	-	-	-
X84	-	-	-	-	-
Sunday Frequency					
Route	Before 08:00	08:00 to 10:00	10:00 to 15:00	15:00 to 18:00	After 18:00
22	-	30 min	20 min	20 min	30 min
A4	-	30 min	20 min	20 min	30 min
L89	60 to 120 min	60 to 120 min	60 to 120 min	60 to 120 min	60 to 120 min
X79	-	-	-	-	-
X84	-	-	-	-	-

Table 2 | *Bus Connects Routes 22, 197, A4, L89, X79 and X84 Frequencies.*

4.2.2 MetroLink

MetroLink is a proposed high-capacity, high-frequency rail line running from Swords through Dublin Airport and Dublin City Centre to Charlemont. MetroLink will carry up to 50 million passengers annually, cutting journey times from Swords to the city centre to 25 minutes. The preferred route for MetroLink is currently undergoing consultation and an application for planning approval for the MetroLink Scheme is expected to be made to An Bord Pleanala in Q2, 2022. Once a Railway Order has been granted, work can commence on site. According to MetroLink, the construction work will take between 6-8 years to complete.

The Estuary Park and Ride station, which is also the terminus of MetroLink is located approximately 2.5km east of the proposed site. It will comprise a multi-storey park-and-ride facility with a total of 3,000 car parking spaces. It is envisaged that the introduction of the MetroLink will see a significant modal shift towards public transport resulting in a lower dependence on the private car. The location of the Estuary Park and Ride station in relation to the proposed development site is illustrated in Figure 7 – extracted from MetroLink website.

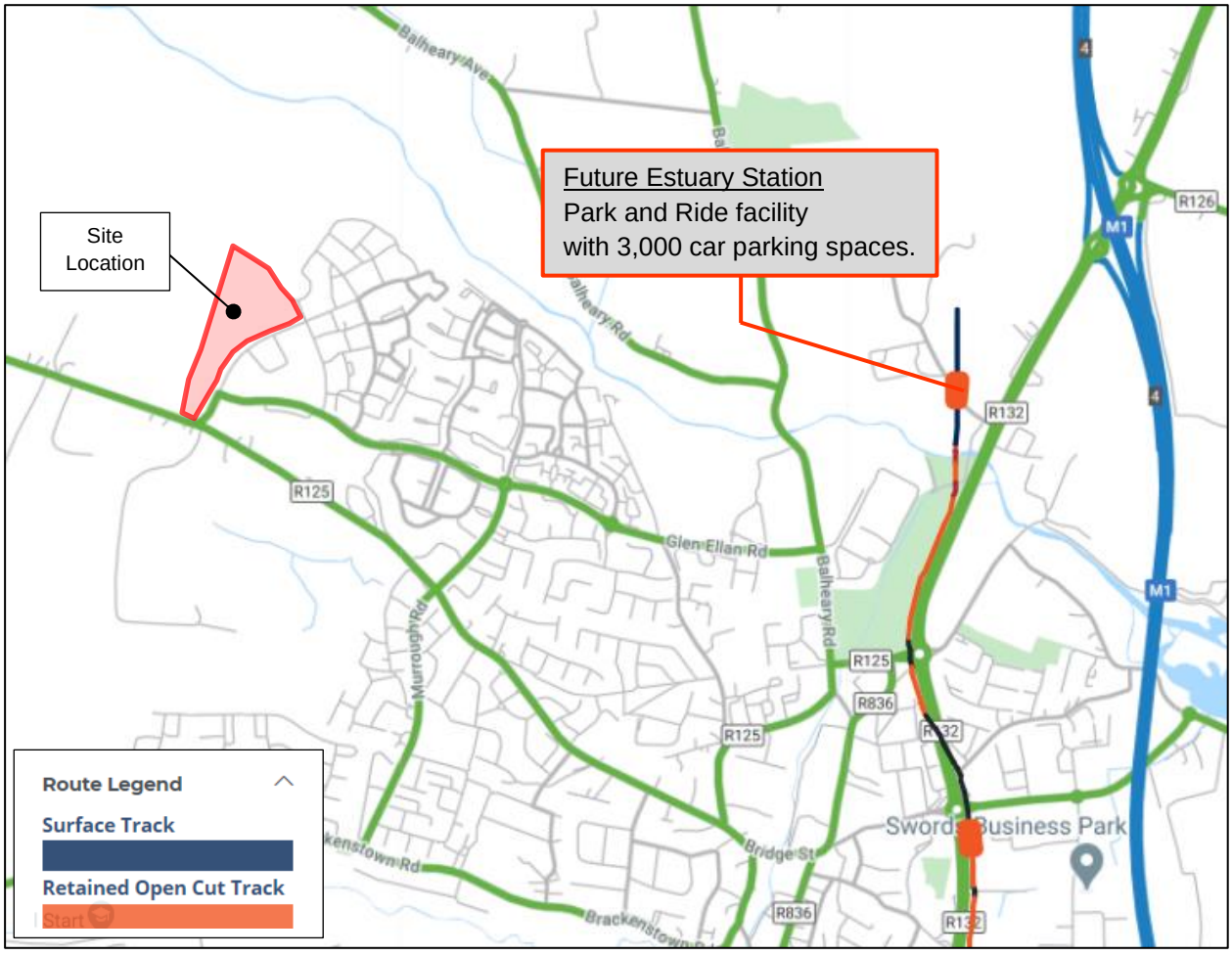


***Figure 7** | Location Map for Proposed Development Site and Estuary Park and Ride Station.*

4.3 Pedestrian Facilities

Additional pedestrian facilities, such as footpaths, dedicated pedestrian crossings and green routes connecting the public parks, will continue to be provided in Oldtown as the development progresses.

4.4 Cycle Facilities

Proposals for the Greater Dublin Area Cycle Network Plan were published by the National Transport Authority in December 2013. The plan sets out a vision and a strategy for the construction and/or designation of a comprehensive network of cycling routes throughout the Greater Dublin Area (Counties Dublin, Meath, Kildare and Wicklow).

An extract from Sheet N9 (Proposed Cycle Network Swords & Malahide) is reproduced in Figure 8 below.

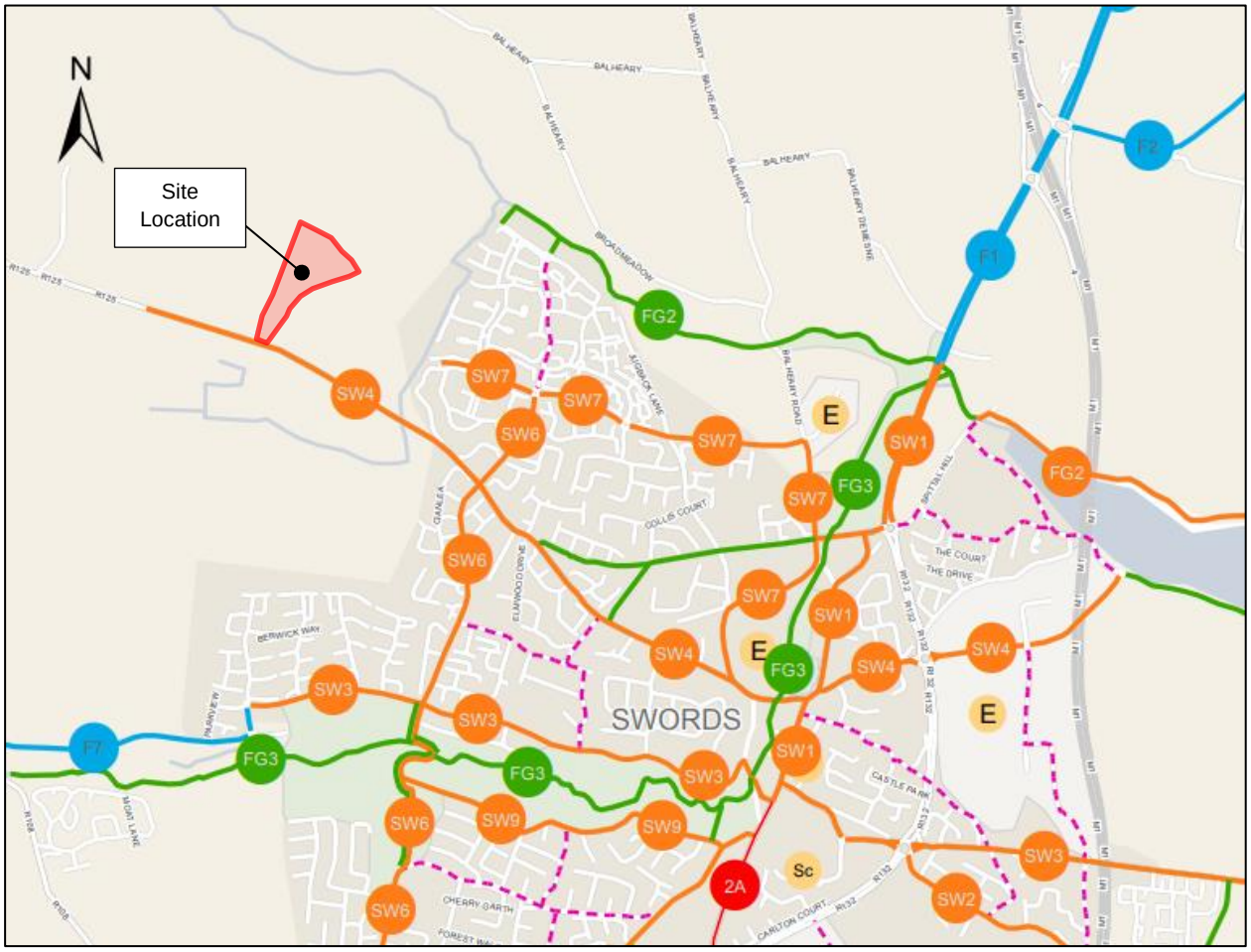


Figure 8 | *Proposed Cycle Network Upgrades.*

As can be seen from the above, Cycle Route SW4 bounds the site to the south.

As described earlier in Section 3.3., as part of the development works that are now complete on the R125 Rathbeale Road within the Oldtown-Mooretown LAP lands, cycle lanes that form part of the Route SW4 have been constructed along both sides of the carriageway from the new signal-controlled junction with Swords Western Distributor Road to the eastern edge of the LAP lands – until the signalised junction with Murrough Road.

These road upgrade works were subject to a Part 8 planning application by FCC which were subject to LIHAF funding.

This planning application received approval in 2017. Works were approved for LIHAF funding and are now complete and open to the public.

5. Proposed Development

5.1 Site Location

The Oldtown-Mooretown LAP lands are located at the western development edge of Swords, within the catchment of the Broadmeadow River. The LAP lands cover an area of approximately 111 hectares.

The Oldtown–Mooretown lands are divided by the Rathbeale Road, with Oldtown lands to the north (c. 50 Ha) and Mooretown to the south (c. 61 Ha). This subject Application (c. 7.80 net Ha), which forms Phase 5 of the Oldtown development, is located in the north-west quarter of the Oldtown Lands. The location is shown in Figure 9 below, and in detail on drawing 17-144-P1000 Site Location Map.

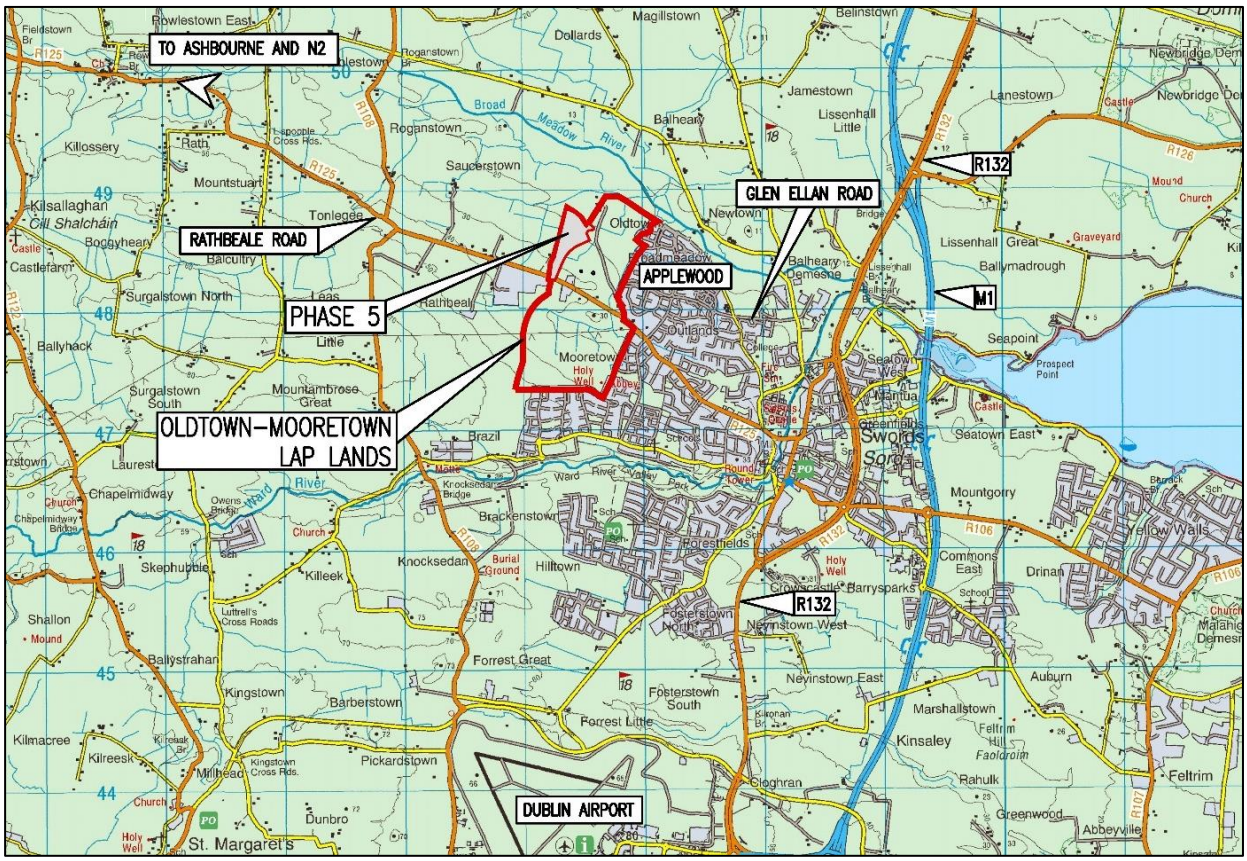


Figure 9 | *Oldtown Planning 05 - Site Location.*

5.2 Site Description

The Oldtown lands generally fall from a high point of approximately 33.0m OD Malin on Rathbeale Road down to approximately 9.0m OD Malin at the Broadmeadow River to the north-east of the subject lands.

The Oldtown Planning 05 site is bounded on the south-east by the Swords Western Distributor Road (SWDR), to the west by agricultural lands.

The subject site was previously used for agricultural purposes and a temporary school, which is now used as the Oldtown site compound.

5.3 Site Access Points

The site will benefit from four vehicular access points (yellow circles in Figure 10 below). Three to be accessed via the substantially constructed Western Distributor Link Road (WDLR) and one via the Park Avenue through the site connection with the recently developed Oldtown Phase 4D approved under Reg. Ref. F18A/0750. These accesses will allow both vehicular and pedestrian/cyclist movements and their location are illustrated in Figure 10 below. Additional pedestrian/cyclists access points are also proposed on R125 Rathbeale Road and on the Western Distributor Link Road (WDLR) to facilitate pedestrians/cyclists' progression towards the closest bus stops, to the adjacent public park and to the surrounding pedestrian and cycling network.

Figure 10 | *Proposed Development – Site Access Points.*

The visibility splays requirements for the vehicular site access proposed on the Western Distributor Link Road (WDLR) are based on the 50kph design speed limit. The sightline requirements for a new priority junction on 50kph road are identified within DMURS which recommends as visibility splay of 45m x 2.4m on roads without bus routes. Further details of these proposed access junctions can be seen on Waterman Moylan Drg. No. 17-144-P1001 to P1004.

5.4 Internal Road Network

All internal roads in the proposed development are designed for a speed limit of 30kph with generally 5.5m wide carriageways and 2.0m wide footpaths along both sides. On street parking intermixed with soft verges will separate footpaths from the main carriageway. All road intersections within the development itself will be priority junctions. The low design speeds and traffic calming measures will ensure the safe operation of these junctions.

5.5 Proposed Development

The proposed development consists of the construction of 173 Houses, 134 Apartments and 70 Duplex units (35 Apartment Duplexes and 35 House Duplexes) on a total area of c. 8.25 Ha. As part of the subject development a Creche with 519 sqm of area is also proposed.

Unit Type	Block	1 – Bedroom	2 – Bedroom	3 – Bedroom	4 - Bedroom	Total
Houses	-	-	9	147	17	173
Duplexes	A	9	8	1	-	18
	B	3	5	-	-	8
	C	3	5	-	-	8
	D	10	9	1	-	20
	E	3	5	-	-	8
	F	3	5	-	-	8
Apartments	A	18	30	-	-	48
	B1	9	23	-	-	32
	B2	9	23	-	-	32
	C	4	18	-	-	22
Total	-	71	140	149	17	377

Table 3 | *Proposed Schedule of Accommodation.*

The development includes all associated site works and infrastructure, including internal roads, paths, cycle-paths, public lighting, utilities, foul and surface water drainage and landscaped open-space.

5.6 Servicing

The proposed development of Oldtown Phase 05 will be accessible for refuse vehicles/fire tenders. Turning path layout is shown on the Waterman Moylan Drg No. 17-144-P1105 accompanying the subject application.

6. Planning Background

6.1 Oldtown Previous Applications

6.1.1 Oldtown Planning 01 & 02 (2011)

The first planning permission for Oldtown lands (Oldtown Planning 01 & 02) was granted by FCC in December 2011 subject to 39 conditions (Reg Ref: F11A/0436).

The permission provided for:

Oldtown Planning 01: 245 residential units comprising 230 houses and 15 apartments.

Oldtown Planning 02: 224 residential units comprising 162 houses and 62 apartments and 1,510 sqm of commercial area.

6.1.2 Oldtown Planning 01 – Amending Applications (2013 to 2016)

In the period following the first planning permission in Oldtown, there have been a number of amending applications between the period of 2013 and 2016 to revise the Oldtown Planning 01 approved under Reg. Ref: F11A/0436. These amending applications, which received grant permission by FCC, are as follows:

Oldtown Planning 01A - (Reg Ref: F13A/0185): Revisions to approved development (Reg. Ref. F11A/0436), to omit 34 four bedroom 2 storey houses and 28 three bedroom 2 storey houses and to now provide 9 four bedroom houses, 45 three bedroom houses and 6 two bedroom houses, all of which are two storey dwellings.

Oldtown Planning 01B (Reg. Ref: F14A/0486): Revisions to approved development (Reg. Ref. F11A/0436), to omit 7 four bedroom 2-storey houses and 25 three bedroom 2-storey houses and to now provide 3 four bedroom houses and 32 three bedroom houses, all of which are 2-storey dwellings.

Oldtown Planning 01C (Reg. Ref: F14A/0419): Revisions to approved development (Reg. Ref. F11A/0436), to omit 12 four bedroom 2-storey houses, 11 three bedroom 2-storey houses and 11 three bedroom 3-storey houses and to now provide 3 four bedroom houses and 28 two bedroom houses, all of which are 2-storey dwellings.

Oldtown Planning 01D (Reg. Ref: F14A/0471): Revisions to approved development (Reg. Ref. F11A/0436), to omit 17 four bedroom 2-storey houses, 28 three bedroom 2-storey houses, 12 two bedroom 2-storey houses and a 316 sq.m. crèche and to now provide 8 four-bedroom houses and 46 three bedroom houses, all of which are 2-storey dwellings.

Oldtown Planning 01E (Reg. Ref: F15A/0136): Revisions to approved development (Reg. Ref. F11A/0436), to omit 17 three bedroom 2-storey houses, 7 four bedroom 2-storey houses, 17 four bedroom 3-storey houses, and now provide 33 three bedroom 2-storey houses, 8 four bedroom 3-storey houses.

Oldtown Planning 01F (Reg. Ref: F16A/0091): Revisions to approved development (Reg. Ref. F11A/0436), to omit 7 two bedroom apartments in a 3-storey plus penthouse block, 5 three bedroom triplex units and 2 two bedroom duplex units and now provide 2 four bedroom 3-storey houses, 4 one-bedroom apartments and 10 two bedroom apartments in a 3-storey plus penthouse block and a 253 sq.m. crèche.

Oldtown Planning 01 is completely constructed and occupied.

6.1.3 Oldtown Planning 02 – Amending Applications (2011, 2018 and 2019)

There have also been a number of amending applications in 2011, 2018 and 2019 to revise the Oldtown Planning 02 approved under Reg. Ref: F11A/0436. These amending applications, which received grant permission by FCC, are as follows:

Oldtown Planning 02 & Commercial Block (Reg. Ref: F11A/0473): This planning application was granted by Fingal County Council in November 2012. It comprised of 224 residential units and a commercial development of 1,510 sqm of area.

Oldtown Planning 02A (Reg. Ref: F18A/0410): Revisions to part of previously permitted development Reg. Ref. F11A/0473 to omit 45 no. 3-bedroom 2-storey houses, 16 no. 4-bedroom 2-storey houses, 10 no. 4-bedroom 2.5 storey houses, 1 no. 2-bedroom 2-storey house, 2 no. 1-bedroom apartments and 19 no. 2-bedroom apartments (93 units in total), an 83m² shop and a 174m² crèche and to now provide 53 no. 3-bedroom 2-storey houses and 11 no. 4-bedroom 2 storey houses, a 3-storey block comprising 2 no. 3-bedroom triplex units, 4 no. 3-bedroom duplex units and 2 no. 2-bedroom apartments, and a 4-storey block of 6 no. 1-bedroom, 6 no. 2-bedroom and 2 no. 3-bedroom apartments (86 units in total), a 162m² shop and a 183m² crèche.

Oldtown Planning 02B (Reg. Ref: F18A/0412): Revisions to part of previously permitted development Reg. Ref. F11A/0473 to omit 15 no. 4-bedroom 2-storey houses, 1 no. 4-bedroom 2.5 storey house and 50 no. 3-bedroom 2-storey houses (66 units in total) and to now provide 11 no. 4-befroom 2-storey houses, 65 no. 3-bedroom 2-storey houses and 4 no. 1-bedroom and 11 no. 2-bedroom apartments in a single 4-storey block (91 units in total).

Oldtown Planning 02C (Reg. Ref: F19A/0101): Revisions to part of previously permitted development Reg. Ref. F11A/0473 to omit 10 no. 4-bedroom 2-storey houses, 10 no. 3-bedroom2-storey houses, 6 no. 2-bedroom 2-storey houses, 18 no. 2-bedroom apartments in 3 blocks of 3-storeys each and 3 no. 2-bed + study own-door maisonettes (47 units in total) and to now provide 25 no. 3-bedroom 2-storey houses, 4 no. 1-bed apartments, 8 no. 2-bedroom apartments and 20 no. 3-bedroom duplex in 2 blocks of 3 storeys (57 units in total).

At the time of writing this report, the commercial block is fully constructed and operational under planning permission Reg. Ref. F11A/0473 and the amended residential units proposed under Oldtown Planning 02A and 02B are at construction stage and 02C is at the compliance stage.

6.1.4 Oldtown Planning 03 (2015)

Oldtown Planning 03 (Reg. Ref: F15A/0390) was granted by Fingal County Council in March 2016. The development, which is labelled as Oldtown Planning 03A, consisted of 246 residential units (134 houses and 112 apartments).

6.1.5 Oldtown Planning 03 – Amending Application (2017)

An amending application to revise the previously permitted development (Reg. Ref: F15A/0390) has been approved by FCC under the following planning application:

Oldtown Planning 03D (Reg. Ref: F17A/0216): Permission for revisions to part of approved development Reg. Ref. F15A/0390 on lands at Oldtown to omit 16 no. 3-bedroom duplex units, 1 no. 3-bedroom triplex unit and 8 no. 2-bedroom apartments on Miller's Avenue (25 units) and to now provide 13 no. 3-bedroom 2-storey houses and 1 no. 4-bedroom 2-storey house (14 units), and to also provide 4 no. 3-bedroom duplex units with 2no. bedroom apartments overhead in a 3-storey block, plus 3 no. 1-bedroom apartments, 10 no. 2-bedroom apartments and 1 no. 3-bedroom apartment in a 4 storey block on Longview Mews (20 units).

Oldtown Planning 03 is completely developed and occupied.

6.1.6 Oldtown Planning 04 (2017)

Oldtown Planning 04 received planning permission under the following planning Reg. Ref's:

Oldtown Planning 04A (Reg. Ref: F17A/0666): this application received planning permission in March 2018. The development consisted of 96 residential units (42 houses and 54 apartments).

Oldtown Planning 04B (Reg. Ref: F17A/0735): this application received planning permission in June 2018. The development consisted of 98 residential units (53 houses and 45 apartments).

Oldtown Planning 04C (Reg. Ref: F17A/0687): this application received planning permission in June 2018. The development consisted of 92 houses.

6.1.7 Oldtown Planning 04 – Amending Application (2018)

An amending application to revise the permitted development (Reg. Ref: F17A/0687) has been approved by FCC in February 2019 under the following planning application:

Oldtown Planning 04B (Ref. Ref. F19A/0486: Revisions to part of previously permitted development Reg. Ref. F17A/0735 to omit a single 3-storey plus penthouse block of 15 apartments comprising 4 no. 1 bedroom apartments, 10 no. 2-bedroom apartments and 1 no. 3-bedroom apartment, and to instead provide 7 no. 4-bedroom 3-storey houses.

Oldtown Planning 04D (Reg. Ref: F18A/0750): Revisions to part of previously permitted development Reg. Ref. F17A/0687 to omit 17 no. 3-bedroom 2-storey houses and 9 no. 4-bedroom 2-storey houses and to instead provide 26 no. different 4-bedroom 2-storey houses and to provide 9 no. new 4-bedroom 2-storey houses on the west side of Park Avenue.

At the time of writing this report, Oldtown Planning 04 is partially constructed.

6.2 Oldtown Current Application

6.2.1 Oldtown Phase 05

The subject application, referred as Oldtown Planning 5, comprises of a total of 377 residential units (134 apartments, 70 duplexes (35 Apartment Duplexes and 35 House Duplexes) and 173 houses) and 519 sqm childcare facility and is the eighth planning application in Oldtown-Mooretown LAP lands

The applicant will also deliver all the associate infrastructure necessary to serve the proposed development, including internal road, footpaths, cycle-paths, public lighting and parking spaces.

6.3 Mooretown Previous Applications

6.3.1 Mooretown Planning 01 (2015)

Mooretown Planning 01 (Reg. Ref:) was granted by Fingal County Council in December 2015. The approved residential development forms part of the Oldtown and Mooretown lands and are subject to the Oldtown-Mooretown Local Area Plan (LAP). The permission provided for 190 houses and 60 apartments.

6.3.2 Mooretown Planning 01 – Amending Applications (2018 and 2019)

In the period between 2018 and 2019, there have been three amending applications to revise the Mooretown Planning 01 approved under Reg. Ref: F15A/0183. These amending applications, which received grant permission by FCC, are as follows:

Mooretown Planning 01A (Reg. Ref: F18A/0701): Permission to omit 43 no. houses comprising 18 no 4-bedroom 2-storey houses, 23 no. 3-bedroom 2-storey houses, 2 no. 3-bedroom 3-storey houses and a single 3 storey with penthouse level block of 15 apartments comprising 4 no. 1-bedroom apartments and 11 no. 2-bedroom apartments (58 units in total) and to now provide 2 no. 2-bedroom 2-storey houses, 33 no. 3-bedroom 2-storey houses and 4 no. 4-bedroom 2-storey houses. It also proposes 2 no. 3-storey with penthouse level apartment blocks comprising 40 no. 2-bedroom apartments and 20 no. 1-bedroom apartments (99 units in total) and a 352m² crèche.

Mooretown Planning 01B (Reg. Ref: F18A/0751): Revisions to part of previously permitted development Reg. Ref. F15A/0183 to omit 77 no. houses comprising 28 no. 4-bedroom 2-storey houses and 49 no. 3-bedroom 2-storey houses and a single 3-storey with penthouse level block of 15 apartments comprising 4 no. 1-bedroom apartments and 11 no. 2-bedroom apartments (92 units in total) and to now provide 5 no. 2-bedroom 2-storey houses, 78 no. 3-bedroom 2-storey houses and 7 no. 4-bedroom 2 storey houses (90 units in total).

Mooretown Planning 01C (Reg. Ref: F19A/0029): Revisions to part of previously permitted development Reg. Ref. F15A/0183 to omit a crèche and 69 no. houses comprising 23 no. 4-bedroom 2-storey houses and 46 no. 3-bedroom 2-storey houses and two 3-storey with penthouse level blocks of 15 apartments comprising 8 no. 1-bedroom apartments and 22 no. 2-bedroom apartments (99 units in total) and to now provide 81 no. 3-bedroom 2-storey houses and 13 no. 4-bedroom 2-storey houses (94 units in total).

At the time of writing this report, Mooretown Planning 01 is under-construction.

6.3.3 Mooretown Planning 02 (2016)

Mooretown Planning 02 (Reg. Ref: F16A/0505) was granted by Fingal County Council in November 2017. The approved residential development forms part of the Mooretown lands and are subject to the Oldtown-Mooretown Local Area Plan (LAP). The permission provided for 188 houses and 50 apartments.

At the time of writing this report, Mooretown Planning 02 is at compliance stage.

6.3.4 Mooretown School Site (2018)

Mooretown School Site (Reg. Ref: F18A/0163) was granted by Fingal County Council in June 2018. The approved school development forms part of the Mooretown lands and is subject to the Oldtown-Mooretown Local Area Plan (LAP). The permission provided for one primary and one post-primary school to cater for a total population of 1,624 pupils.

At the time of writing this report, Mooretown School Site is operational.

7. Oldtown-Mooretown Local Area Plan (2010-2016)

7.1 Phasing of Development

As presented earlier in this report, the Oldtown-Mooretown LAP (2010) is required to be developed in 4 phases as follows:

- **Phase 1:** Residential Development of approximately 800 units, representing circa 25% of the overall LAP development.
- **Phase 2:** Residential Development of approximately 1,000 units, representing circa 30% of the overall LAP development.
- **Phase 3:** Residential Development of approximately 600 units, representing circa 20% of the overall LAP development.
- **Phase 4:** Residential Development of approximately 800 units, representing circa 25% of the overall LAP development.

7.2 Phase 1 - Existing Developments

The existing developments (Constructed-Occupied and Constructed-Not Occupied) in the Oldtown-Mooretown LAP lands during the preparation of this report, is summarised in Table 4.

Planning Area	Stage	Total Residential (Units)	Total Non-Residential (sqm or pupils)
Oldtown 01	234 Constructed and Occupied	234	-
Oldtown 03A&D	161 Constructed and Occupied	181	-
Oldtown 02 (Commercial Block)	48 Constructed and Occupied	249	1,510 sqm
Oldtown 04A	41 Constructed not fully occupied	95	-
Oldtown 04B	53 Constructed not fully occupied	98	-
Oldtown 04C&D	101 Constructed fully not occupied	101	-
Total Oldtown		958	1,510 sqm
Mooretown School	Constructed and operational	-	1,624 pupils
Mooretown Phase 1	223 under Constructed	283	-
Total Mooretown		283	1,624 pupils
Total Oldtown-Mooretown		**1,241**	**1,510 sqm 1,624 pupils**

Table 4 *| Existing Developments (Occupied and Not Occupied) on the LAP Lands - 2022.*

As shown in Section 7.1 above, Phase 1 of the LAP accounts for the first 800 residential units. The construction programme is to construct Oldtown Planning 05 (subject application) after Oldtown Planning 04, which is now completely constructed. The recently developed Oldtown Planning 04 together with the

existing developments of Oldtown Planning 01 & 03 will approximate the LAP Phase 1 limit (800 units) with 756 units and will bring the subject application (Oldtown Planning 05) into the LAP Phase 2.

7.3 Phase 2 - New Development (Approved and Proposed) - 2025

The new developments estimated to be completed and occupied in the Oldtown-Mooretown LAP lands by 2025 is summarised in Table 5.

Planning Area	Stage	Total Residential (Units)	Total Non-Residential (sqm)
Oldtown 02A	Approved not constructed	86	-
Oldtown 02B	Approved not constructed	91	-
Oldtown 02C	Approved not constructed	56	-
Oldtown 05	Approved not constructed	377	519
Total Oldtown		610	519
Mooretown 01 (A, B and C)	Approved not constructed	283	-
Mooretown 02	Approved not constructed	208	-
Mooretown 03	Potential Future Development	650	1,482
Total Mooretown		1,141	1,482
Total Oldtown-Mooretown		**1,751**	2,001

Table 5 | *New Developments (Approved and Proposed) – Oldtown-Mooretown LAP - 2025.*

7.4 Overall Oldtown-Mooretown LAP Development - 2030

The development of the entire Oldtown lands, considering the developed Oldtown Planning 01, 03 and 04, the approved Oldtown Planning 02 and the proposed Oldtown Planning 05, will consist of 1,367 residential units, a 519 sqm creche and a total of 1,510 sqm of retail area. No further developments are envisaged for Oldtown lands.

The Mooretown lands, considering the approved Mooretown Planning 01 & 02 and the potential future development of Mooretown Planning 03 and the recently constructed School Site will consist of 521 residential units and two schools to cater for 1,624 pupils. These developments, when summed with the approved/proposed developments in Oldtown lands, will equate to:

- 2,485 residential units (1,344 in Oldtown and 1,141 in Mooretown);
- 1,510 sqm of retail area in Oldtown;
- 1,465 sqm of non-residential area in Mooretown; and
- School Site at Mooretown to attend 1,624 pupils.

The LAP Phasing Programme as briefly described in Section 7.1 above, indicates that the overall Oldtown-Mooretown will facilitate a total of 3,200 residential units. Tables 5 and 6, show that 1,511 units have already

been constructed/approved within the LAP lands and 377 are proposed as part of the subject application. As no further developments are envisaged for Oldtown lands, the remaining c. 1,300 residential units for the overall LAP are predicted on Mooretown.

'Section 3.3.7 Local Centres: Retail and Commercial Services' of the Oldtown-Mooretown LAP sets out the maximum quantum of retail and commercial (non-retail) areas to be facilitated in Oldtown and Mooretown lands. For Oldtown, the Local Centre should comprise no greater than 2,000 sqm of retail, whilst a max 10,000 sqm Local Centre should be facilitated in Mooretown, with max 7,500 sqm for retail and max 2,500 sqm for non-retail.

As shown above, a retail development comprising of 1,510 sqm of area is already constructed in Oldtown as part of Oldtown Planning 02. No additional retail units are envisaged for Oldtown lands.

For Mooretown, no retail or commercial development has been proposed/approved to date. Therefore, as part of the potential future developments in Mooretown, 7,500 sqm of retail and 2,500 sqm of non-retail have been assumed.

In summary, the overall Oldtown-Mooretown LAP development is estimated to consist of:

- c. 2,485 residential units, of which:
  - 1,344 units in Oldtown, and
  - 1,141 units in Mooretown.
- 11,510 sqm of commercial development, of which:
  - 1,510 sqm of retail in Oldtown,
  - 7,500 sqm of retail in Mooretown, and
  - 2,500 sqm of non-retail in Mooretown.
- School Site to cater for 1,624 pupils in Mooretown.

For the purpose of this assessment, it has been assumed that the overall Oldtown-Mooretown LAP, including residential and non-residential, approved, proposed and potential future developments, will be fully constructed and occupied by 2030.

8. Travel Characteristics

8.1 Road Traffic Survey

In order to determine the volume of traffic movements at key points on the road network surrounding the subject site, traffic count data has been assessed for four junctions in the vicinity of the site.

Due to the fact that a number of companies across Dublin are still working on a remotely or hybrid basis not generating daily commuting trips, a traffic survey was not carried out as part of the subject application. Instead, historic traffic count data from 2005/2006, 2017 and 2019 has been used to extrapolate current and anticipated volumes.

The 2017 and 2019 data used is taken from a traffic count survey which was carried by IDASO Ltd. on 03rd October 2017 and on 21st May 2019 at the two junctions indicated in Figure 11. The junctions surveyed were Junction 2 (2017) and Junction 4 (2019).

The 2005/2006 traffic volume data used is taken from the Environmental Impact Statement (EIS) prepared by Downey Hynes Partnership in November 2011 approved by FCC under Reg. Ref. F11A/0436. This data was based on extensive traffic and transportation studies that were carried out in 2010 on behalf of Fingal County Council.
It is recognised that traffic volume data from 2005/2006 are not appropriate to be used when preparing a report 15 years later as such data is likely to change as a reflex of many factors along the years.
However, due to the absence of more recent traffic volume data and the fact that a traffic survey in the current climate would not yield useful data, the 2005/2006 has been used for Junctions 1 and 3.

- **Junction 1 (Priority T-junction):** R125 Rathbeale Road/R108 Naul Road;
- **Junction 2 (Signalised Crossroads):** R125 Rathbeale Road/Western Distributor Link Road (WDLR);
- **Junction 3 (Signalised Corssroads):** R125 Rathbeale Road/Murrough Road;
- **Junction 4 (Four-armed Roundabout):** Glen Ellan Road.

The full results of the survey are included in Appendix A of this report.

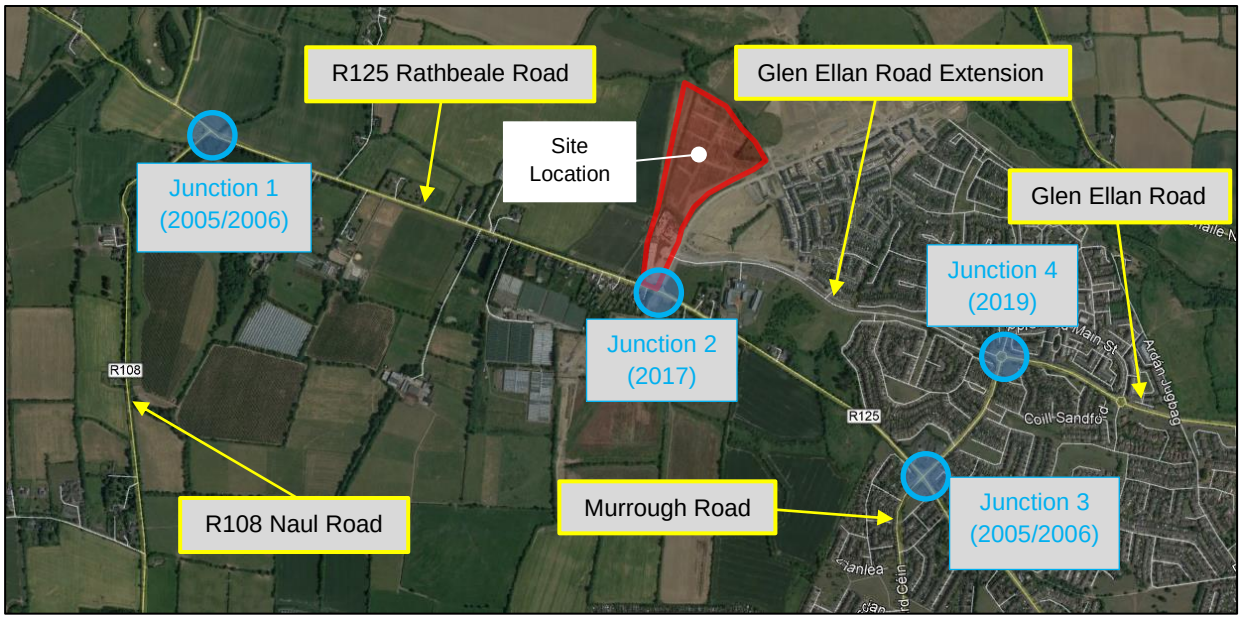


Figure 11 | *Location of Surveyed Junctions.*

The survey identified the AM peak hour as 08h00 - 09h00 and the PM peak hour as 17h00 – 18h00 for all surveyed junctions, except Junction 4 which the PM Peak hour is identified as 18h00 – 19h00. The peak hour volumes are illustrated in Figure 12.

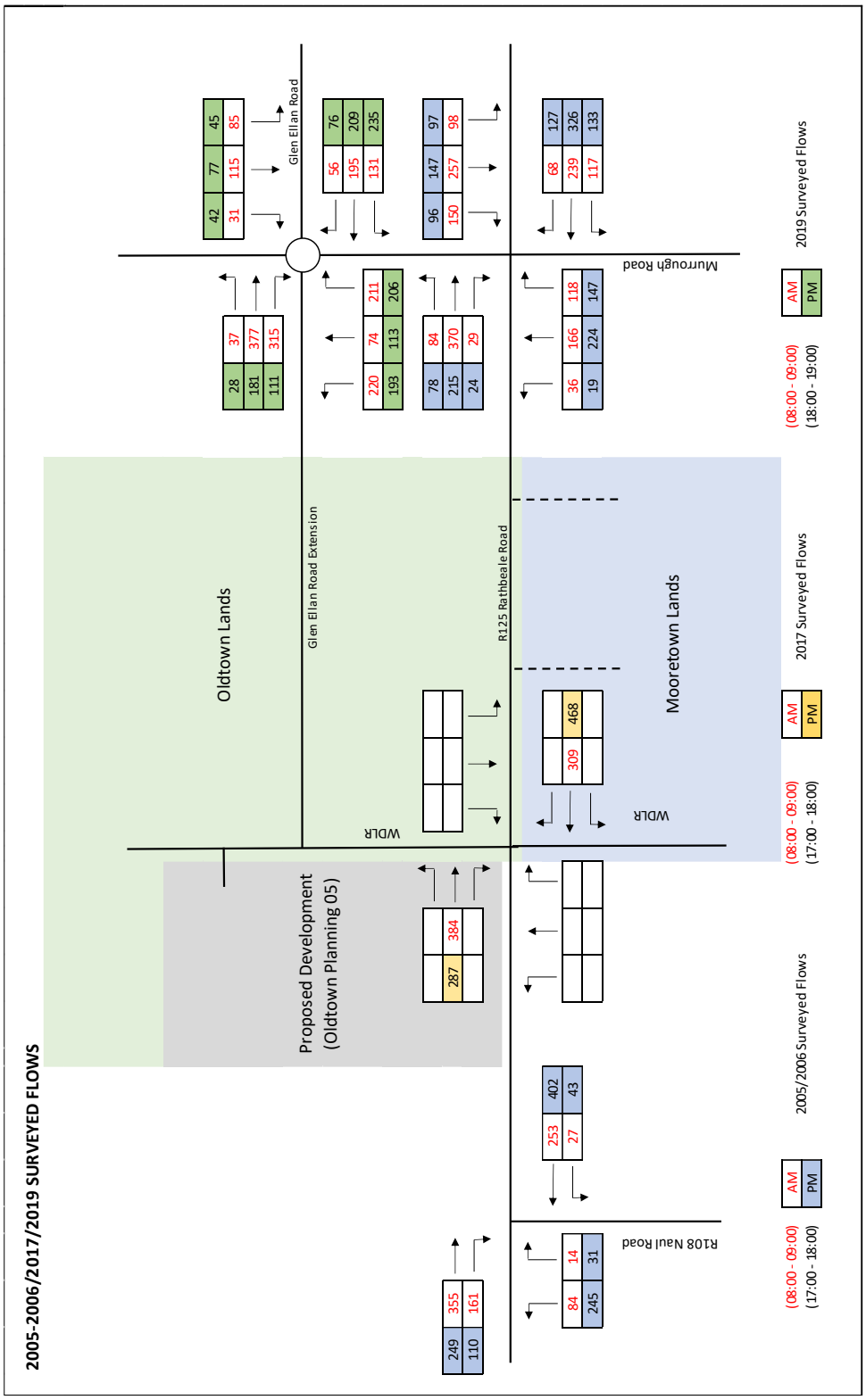


Figure 12 | *Historic Traffic Count Surveys – 2005-2006 / 2017 and 2019.*

8.2 Small Areas - Census 2016

Census 2016 was carried out by the Central Statistics Office on 24th April 2016.

With the objective to obtain information regarding 'car ownership', the existing residential areas to the east of the Oldtown-Mooretown LAP lands have been consulted. For the purpose of the 2016 survey, these areas have been divided in 25 Small Areas, 12 to the north and 13 to the south of R125 Rathbeale Road. These consulted Small Areas are illustrated in Figure 13.

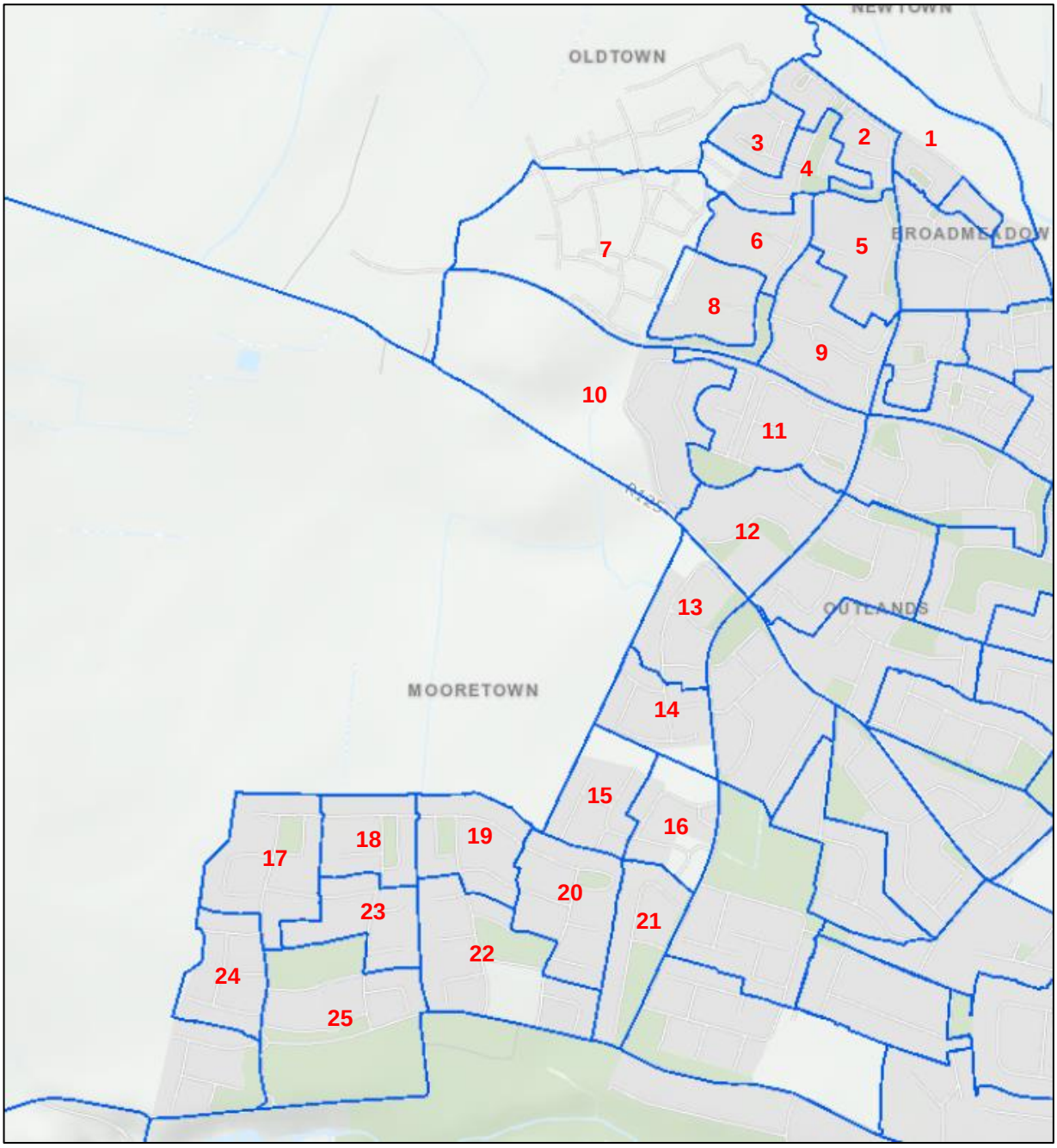


Figure 13 | *Small Areas for Census 2016 – Extracted from SAPMAPs.*

8.3 Car Ownership – Census 2016

The results of the census for car ownership in the consulted Small Areas is presented in Table 6.

The survey recorded that the population of 7,606 persons living in these zones had a car ownership of 3,299 vehicles equivalent to 1 car per 2.3 persons or 1.45 car per residential unit.

CAR OWNERSHIP										
ZONE	Population	Housing	0	1	2	3	4+	Not Stated	TOTAL	Total/ Housing
1	227	74	22	37	7	2	1	5	61	0.82
2	291	97	9	48	31	2	0	7	116	1.20
3	237	79	9	34	30	1	0	5	97	1.23
4	239	77	7	42	24	1	0	3	93	1.21
5	296	108	6	54	41	1	0	6	139	1.29
6	225	71	5	32	29	4	0	1	102	1.44
7	242	88	2	35	46	2	0	3	133	1.51
8	332	110	4	56	44	3	1	2	157	1.43
9	382	122	12	54	42	5	2	7	161	1.32
10	350	94	2	26	59	5	1	1	163	1.73
11	435	116	2	41	66	2	1	4	183	1.58
12	272	80	6	29	36	2	0	7	107	1.34
13	252	72	3	27	37	1	1	3	108	1.50
14	273	81	3	37	29	5	0	7	110	1.36
15	282	85	9	37	30	2	0	7	103	1.21
16	251	83	8	42	18	3	0	12	87	1.05
17	461	120	4	36	69	11	0	0	207	1.73
18	310	83	3	26	42	8	1	3	138	1.66
19	321	92	1	26	50	8	2	5	158	1.72
20	439	120	9	46	46	17	2	2	197	1.64
21	200	69	10	29	23	5	0	2	90	1.30
22	400	110	3	38	61	6	1	1	182	1.65
23	313	86	3	25	48	6	3	1	151	1.76
24	320	83	3	32	41	5	1	1	133	1.60
25	256	72	3	28	25	11	3	2	123	1.71
TOTAL	**7,606**	**2,272**	**148**	**917**	**974**	**118**	**20**	**97**	**3,299**	**1.45**

Table 6 | *Surveyed Car Ownership – Small Areas Census 2016.*

8.4 Modal Split, Swords North West Sector – South Fingal Transport Study

The Swords Sub Area Report, prepared by SYSTRA in 2019 as part of the overall South Fingal Transport Study, places emphasis on the NTA Statement of Strategy (2018 – 2022) which includes as a priority the promotion of more sustainable modes of transport (e.g. public transport and active modes of travel).

According to Section 2.3.1 of the Swords Sub Area Report, the proposed development of Oldtown Planning 05 – and the overall Oldtown-Mooretown LAP lands, fall within the 'North West Sector' of Swords. See Figure 14 – extracted from '*Figure 2.2 Swords Sectors'* of the Swords Sub Area Report.

Section 4.2.2.1 of the Swords Sub Area Report provides a comparison between three distinct scenarios (DoMin 2016, DoMin2027 and GDA Strategy No Metro 2027) to identify potential future changes in modal choice for the 'Swords North West Sector' for the future year of 2027 with no intervention (DoMin 2027) and with the implementation of the GDA Strategy (2027 GDA Strategy No Metro). The GDA Strategy consists of NTA GDA Strategy improvements to the bus network and cycle facilities without the implementation of the MetroLink. Bus Connects Project is included as part of the NTA GDA Strategy.

The chart below – extracted from *'Figure 4.3 Trip Generation by Mode, Swords North West'* within Swords Sub Area Report of the *South Fingal Transport Study,* indicates that during Census 2016, the modal split in the Swords North West sector was 52% by Car, 27% by Public Transport, 18% by Walk and 2% by Cycle. The chart also shows that for the 2027 DoMin, with the recognised housing in place (including the overall Oldtown-Mooretown LAP) without any intervention to the transportation network, the Swords North West area will face a large increase in the use of cars (to 62%), followed by a decrease in the use of Public Transport to 16%, 20% On Foot and the remaining 2% Cycle.

In the GDA Strategy scenario, with the recognised housing in place and an enhanced bus and cycle network (including Bus Connects), the results indicate that car trips will reduce considerably when compared to the 2027 DoMin, whilst public transport will increase. However, the absolute level of car trips in this scenario, with no further interventions, will remain higher than the current levels (DoMin 2016), and the identified modal split is predicted as the same recorded during Census 2016 – 52% by Car (8,528 trips), 27% by Public Transport (4,386 trips), 18% by Walk (2,958 trips) and 3% by Cycle (372 trips). This indicates that improvements to the bus/cycle network, will avoid a percentage increase in the Car usage in Swords North West sector, however the total number of car trips will still be higher than the current values.

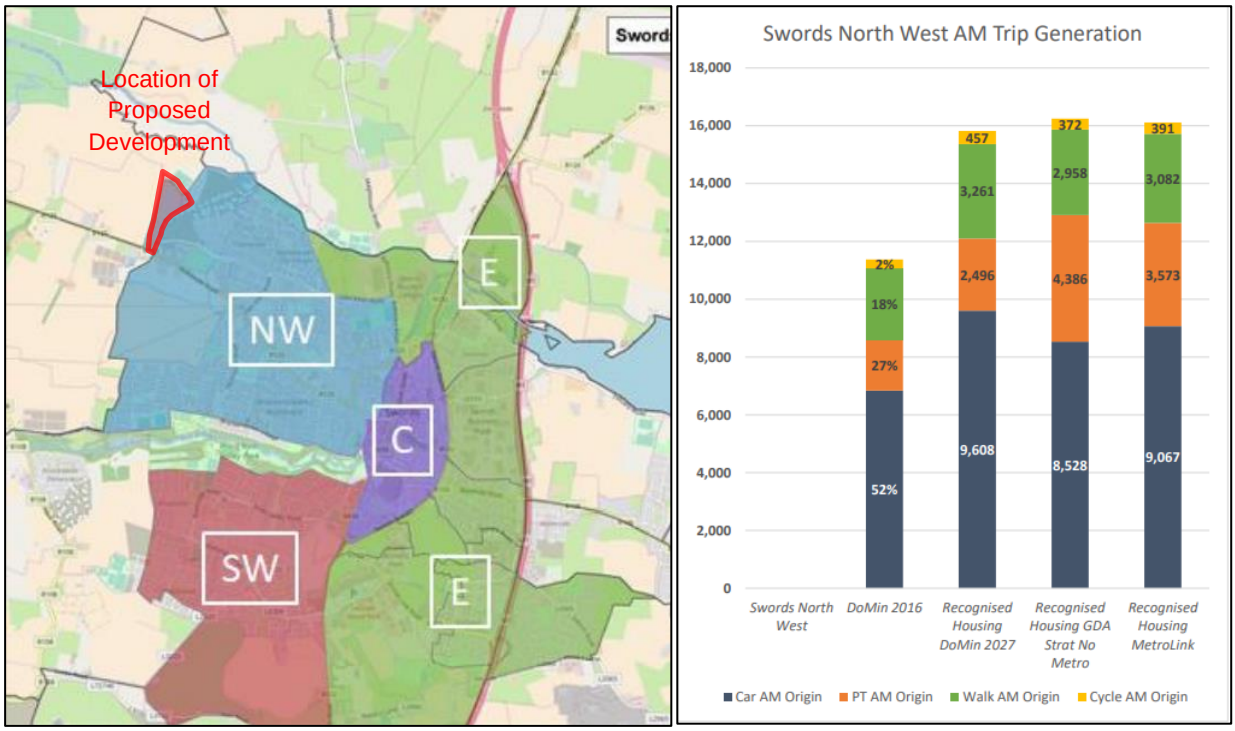


Figure 14 | *SFTS – Modal Split Figures, Swords North West Sector.*

9. Trip Generation

9.1 TRICS - Vehicle Trip Rates

In order to assess the likely impact of the traffic generation arising from the new developments at Oldtown-Mooretown LAP, TRICS software has been consulted. TRICS is the national standard of trip generation and analysis in Ireland. It is a database system which allows users to identify representative trip rates and to establish potential levels of trip generation for a wide variety of developments.

Full trip rates for each land use (residential, retail and commercial (not retail)), which were taken from TRICS Database version 7.8.1 are included in Appendix B. A summary of the peak hour trip rates is presented in Table 7 below.

The output reports of TRICS indicated different AM&PM peak hours for each land use category. TRICS Peak Hours for the retail use, for example, are identified from 12:00 to 13:00 and from 14:00 to 15:00 which also do not coincide with the peak hours identified in the Traffic Surveys showed in Section 8.1 – Figure 12. Therefore, in order to represent a complete and more realistic trip generation of the new developments (approved, proposed and potential future) at the Oldtown-Mooretown LAP area, the following bullet pointed peak hours have been selected as being the TRICS trip rates considered appropriate for each use in relation to the Traffic Surveys peak hours and were selected carefully to avoid any over or underestimation of trips.

Land Use Category	**AM Peak Hour**	**PM Peak Hour**
• Residential	08:00 to 09:00*	17:00 to 18:00*
• Retail	09:00 to 10:00**	17:00 to 18:00**
• Commercial (Non-retail)	09:00 to 10:00**	18:00 to 19:00**
• Traffic Surveys	08:00 to 09:00	17:00 to 18:00

* Peak Hour indicated by TRICS consultation.
** Selected Peak Hour from TRICS.

Land Use Category	AM Peak Hour		PM Peak Hour	
	Trip Rate IN	Trip Rate OUT	Trip Rate IN	Trip Rate OUT
Mixed Residential (Flats and Houses)	**0.107** per unit	**0.284** per unit	**0.237** per unit	**0.136** per unit
Retail	**2.373** per 100 sqm	**1.594** per 100 sqm	**2.637** per 100 sqm	**2.912** per 100 sqm
Commercial (Non-retail)	**0.780** per 100 sqm	**0.314** per 100 sqm	**2.352** per 100 sqm	**1.874** per 100 sqm

Table 7 | *TRICS – Vehicle Trip Rates.*

There is a creche included with the Oldtown Planning Phase 5, however for the purposes of the TTA,

During the Pre-Planning consultation Fingal County Council raised a concern in relation to the use of TRICS trip rates for 'Mixed Residential Development (Flats and Houses)' and noted that trip rates for 'Flats' tend to underestimate the trip generated by 'Apartments'. This concern was noted and a new consultation of TRICS Database was undertaken. In this consultation it was observed that TRICS Software does not include an option for 'Apartments', and instead uses the term 'Flats', which has been considered synonymous to 'Apartments'. See Figure 15 – snip from TRICS software Land Use Selection page.

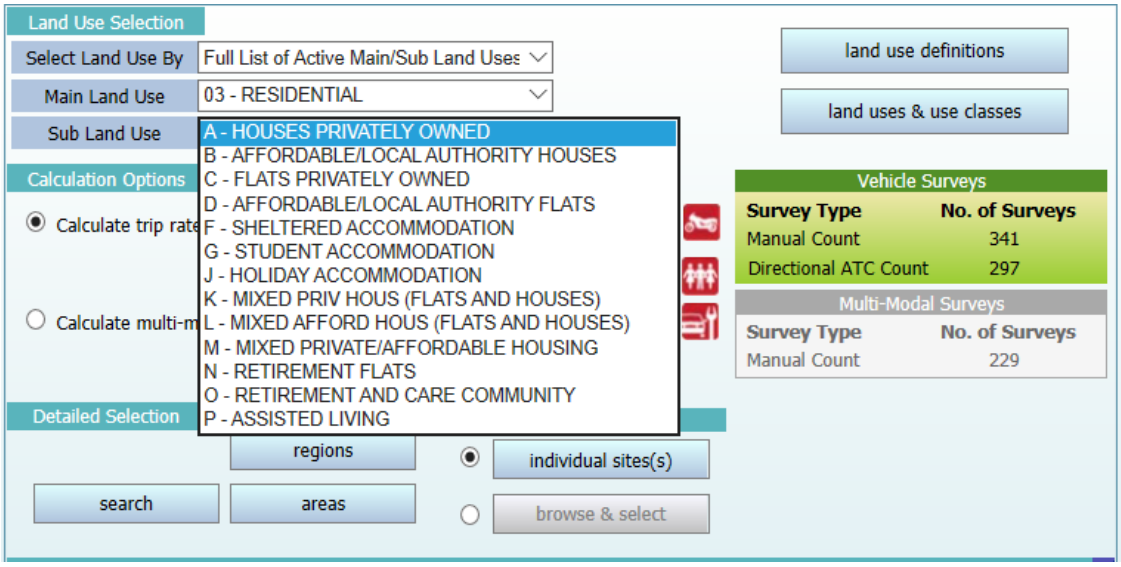


Figure 15 | *Land Use Selection – TRICS Database System.*

9.2 Vehicle Trip Generation

9.2.1 2025 (Opening Year of Oldtown Planning 05)

The vehicle trip generation calculation for the assessment year of 2025 (Opening Year of Proposed Development – Oldtown Planning 05) is shown below. As presented earlier in Section 7 of this report, it is estimated that, in 2025, the following developments will be in place at the Oldtown-Mooretown lands:

Oldtown

- Residential development (constructed and occupied, constructed not occupied, approved not constructed and proposed) comprising a total of 1,344 residential units.
- Retail development (constructed and operational) comprising of 1,510 sqm of area.

Land Use	Phase Reference	Dev. Size	AM Peak Hour		PM Peak Hour	
			Trips IN	Trips OUT	Trips IN	Trips OUT
Residential	Oldtown 01*	243 units	26	69	58	33
Residential	Oldtown 03A&D*	181 units	19	51	43	25
Residential	Oldtown 04A*	95 units	10	27	23	13
Residential	Oldtown 04B*	98 units	10	28	23	13
Residential	Oldtown 04C&D*	101 units	11	29	24	14
Residential	Oldtown 02A**	86 units	9	24	20	12
Residential	Oldtown 02B**	91 units	10	26	22	12
Residential	Oldtown 02C**	56 units	6	16	13	8
Residential	Oldtown 05***	377 units	40	107	89	51
Retail	Oldtown 02*	1,510sqm	36	24	40	44
Total	Oldtown	1,344 units 1,510 sqm	178	401	355	225

Table 8 | *Trip Generation – Oldtown Developments - 2025.*

* Development Constructed and Occupied.
** Development Approved but not Constructed.

*** Development proposed as part of the subject application.

As can be seen from above, it is estimated that the Oldtown development (considering constructed, approved and proposed developments) will generate a total of 579 vehicle trips in the AM peak hour (178 inbound and 401 outbound) and a total of 579 vehicle trips in the PM peak hour (355 inbound and 225 outbound).

At the time of writing this report, the developments of Oldtown 01 and Oldtown 03A&D were fully constructed and occupied, which suggests that the trips associated with these developments already exist on the road network and the calculation of trip generation for them would not be necessary. In a typical and normal situation these trips would be accounted for in the traffic survey. However, as previously described, a traffic survey was not carried out as part of the subject application, and instead, historic traffic count data, extracted from previous assessments in the area, were used. At the time when the used traffic surveys were carried out, the development of the Oldtown 01 and Oldtown 03A&D were not in place and therefore their associated trips, were not existent. In this case, with the objective to undertake a complete assessment of the surrounding road network and analysed junctions, trip generation for Oldtown 01 and Oldtown 03A&D have been calculated and included in this assessment as part of the additional trips.

Mooretown

- Residential development (approved not constructed) comprising a total of 521 residential units.
- School development (constructed not occupied) to cater for 1,624 pupils on site.

The Mooretown School Site received permission from FCC to develop one primary school and one post-primary school to cater for a total population of 1,624 pupils. These schools are currently constructed but not yet operational.

In order to understand the future travel patterns of the pupils attending these schools, the approved School Travel Plan (STP) prepared by Waterman Moylan for the school site (Reg. Ref: F18A/0163) has been consulted. In this consultation, it was identified two modal split scenarios of which trip generation calculation was based on; the Opening Modal Split, referent to the expected modal split during the opening year of the schools, and the Target Modal Split, which indicates a target pattern of commuting based on a reduced use of car which will be achieved through the methods described in the STP, such as promoting car-pooling / sharing, promoting private bus services, promoting park and stride strategies and promoting walking and cycling.

For the Opening Modal Split, the usage of private car to commute to the school site was determined as 40%, which reduces to 35% for the Target Modal Split with the school fully operational.

As part of the STP, two other relevant commuting parameters were also used to calculate car trip generation for the schools during the opening and future years. These are shown below.

	Average Car Occupancy	% Early Drop Off
School Opening Year:	1.5	5%
Future Year:	1.75	10%

It is recognised that by the year of 2025 (Opening Year of Oldtown Planning 05 and assessment year of this TTA) the schools are unlikely to be operating at full capacity. However, in order to undertake a robust and conservative assessment of the surrounding road network and analysed junctions, as part of this TTA, trip generation for the Mooretown School site has been calculated based on the future year parameters as shown above and the schools operating at their full capacities. The estimated car trips for the Mooretown School development are presented below.

Development	Pupils	% Car (Future Modal Split)	Average Car Occupancy	% Early Drop Off	AM Peak Hour Trips	
					Trips IN	Trips OUT
Mooretown School	1,624 pupils	35%	1.75	10%	292	292
Total	-	-	-	-	292	292

***Table 9** | Trip Generation – School Site in Mooretown – 2025.*

As can be seen from above, based on the future travel patterns as indicated in the School Travel Plan for the Mooretown School, the site is estimated to generate a total of 584 car trips in the AM peak hour (292 inbound and 292 outbound). No PM peak hour trips were assumed for the school site as the school collection period will not coincide with the road network peak hour.

Trip generation calculation for the residential developments in Mooretown (approved but not constructed) are shown below.

Land Use	Phase Reference	Dev. Size	AM Peak Hour		PM Peak Hour	
			Trips IN	Trips OUT	Trips IN	Trips OUT
Residential	Mooretown 01AB&C*	283 units	30	80	67	38
Residential	Mooretown 02*	208 units	22	59	49	28
Total	Mooretown	491 units 1,624 pupils	52	139	116	66

***Table 10** | Trip Generation – Mooretown Developments - 2025.*

* Development Approved but not Constructed.

As can be seen from above, it is estimated that the Mooretown development (considering the constructed school site and approved but not constructed residential developments) will generate a total of 775 vehicle trips in the AM peak hour (344 inbound and 431 outbound) and a total of 182 vehicle trips in the PM peak hour (116 inbound and 66 outbound).

9.2.2 2030 (Opening Year of Oldtown Planning 05 + 5 Years)

The vehicle trip generation calculation for the assessment year of 2030 (Opening Year of Proposed Development – Oldtown Planning 05 + 5 Years) is shown below.

As presented earlier in Section 7 of this report, it is assumed that, in 2030, the overall Oldtown-Mooretown Local Area Plan will be fully developed and occupied.

The overall Oldtown-Mooretown lands, based on the Oldtown-Mooretown LAP, will consist of all developments showed above in Section 9.2.1 with the addition of c. 1,300 new residential units and 10,000 sqm of commercial area (7,500 sqm of retail and 2,500 sqm of non-retail) in Mooretown lands.

Oldtown Planning 05, proposed under the subject application, is the last phase of the Oldtown Lands, therefore no additional development has been considered for Oldtown in 2030.

Oldtown

- Same developments (constructed, approved and proposed) as showed above in Section 9.2.1.

- No additional developments.

Mooretown

- Same developments (constructed and approved) as showed above in Section 9.2.1
- Additional residential development with c. 1,300 residential units.
- Additional retail development with c. 7,500 sqm of area.
- Additional commercial (non-retail) development with c. 2,500 sqm of area.

Land Use	Phase Reference	Dev. Size	AM Peak Hour		PM Peak Hour	
			Trips IN	Trips OUT	Trips IN	Trips OUT
Residential	Potential Future	c. 1,300 units	139	369	308	177
Retail	Potential Future	c. 7,500 sqm	178	120	198	218
Commercial (Non-retail)	Potential Future	c. 2,500 sqm	20	8	59	47
Total	Mooretown	c. 1,300 units c. 10,000 sqm	337	497	565	442

Table 11 | *Trip Generation – Mooretown Developments - 2030.*

It can be seen from the above that the potential future developments in Mooretown lands, is estimated to generate a total of 834 vehicle trips in the AM peak hour (337 inbound and 497 outbound) and a total of 1,007 vehicle trips in the PM peak hour (565 inbound and 442 outbound).

9.2.3 Summary

Table 12 below shows a summary of the vehicle trips expected to be generated by the Oldtown-Mooretown LAP lands during the assessment year of 2025 (Opening Year of proposed Oldtown Planning 5) and the cumulative future year of 2030 (Opening Year of proposed Oldtown Planning 5 +5 Years).

Year	Area	AM Peak Hour		PM Peak Hour	
		Trips IN	Trips OUT	Trips IN	Trips OUT
2025	Oldtown	182	316	279	178
	Mooretown	347	440	123	70
Subtotal 2025		529	756	402	248
2030	Oldtown	-	-	-	-
	Mooretown	337	497	565	442
Subtotal 2030		337	497	565	442
Total 2030 (Subtotal 2025 + 2030)		**866**	**1253**	**967**	**690**

Table 12 | *Summary of Trip Generation – Oldtown & Mooretown – 2025 and 2030.*

10. Trip Distribution

In order to determine the amount of new car trips expected to travel through each assessed junction in the local road network, the calculated vehicle trips for Oldtown and Mooretown lands in the assessed years of 2025 (Opening Year of Proposed Development – Oldtown Planning 05) and 2030 (Opening Year of Proposed Development + 5 Years), summarised in Table 12, have been distributed and are presented below.

10.1 Oldtown

Access to the Oldtown lands will be provided via the Recently Constructed Signalised Crossroads between the R125 Rathbeale Road and the Western Distributor Link Road (WDLR), and via the Existing Four-armed Roundabout between the Glen Ellan Road and the Glen Ellan Road Western Extension.

Given the location of Oldtown lands – at the north-western edge of Swords, its position in relation to major employment and commercial centres, and the access routes to the R132 and the M1 motorway to the east, it was assumed that 80% of all Oldtown trips will make their way to the east along R125 Rathbeale Road and Glen Ellan Road, whilst the remaining 20% will travel westward along R125 Rathbeale Road. Of the 80% traveling east, 40% was assumed to leave the Oldtown lands via the Glen Ellan Road and 40% via the R125 Rathbeale Road.

Trip distribution percentage for the Glen Ellan Road roundabout, the signalised crossroads between R125 Rathbeale Road and Murrough Road and the priority T-junction between R125 Rathbeale Road and R108 Naul Road, were generally calculated using the base surveyed flows and associated turning movements. These percentages are shown in Figure 17.

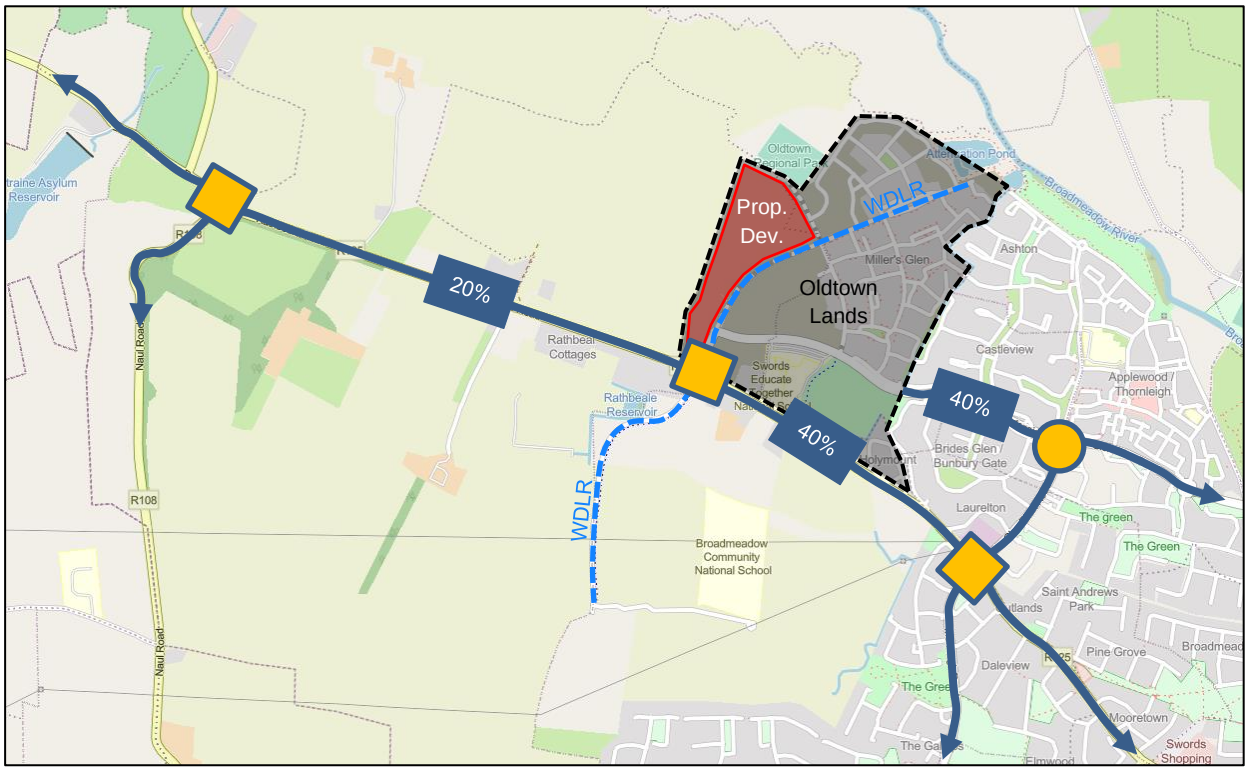


Figure 16 | *Trip Distribution – Oldtown Lands.*

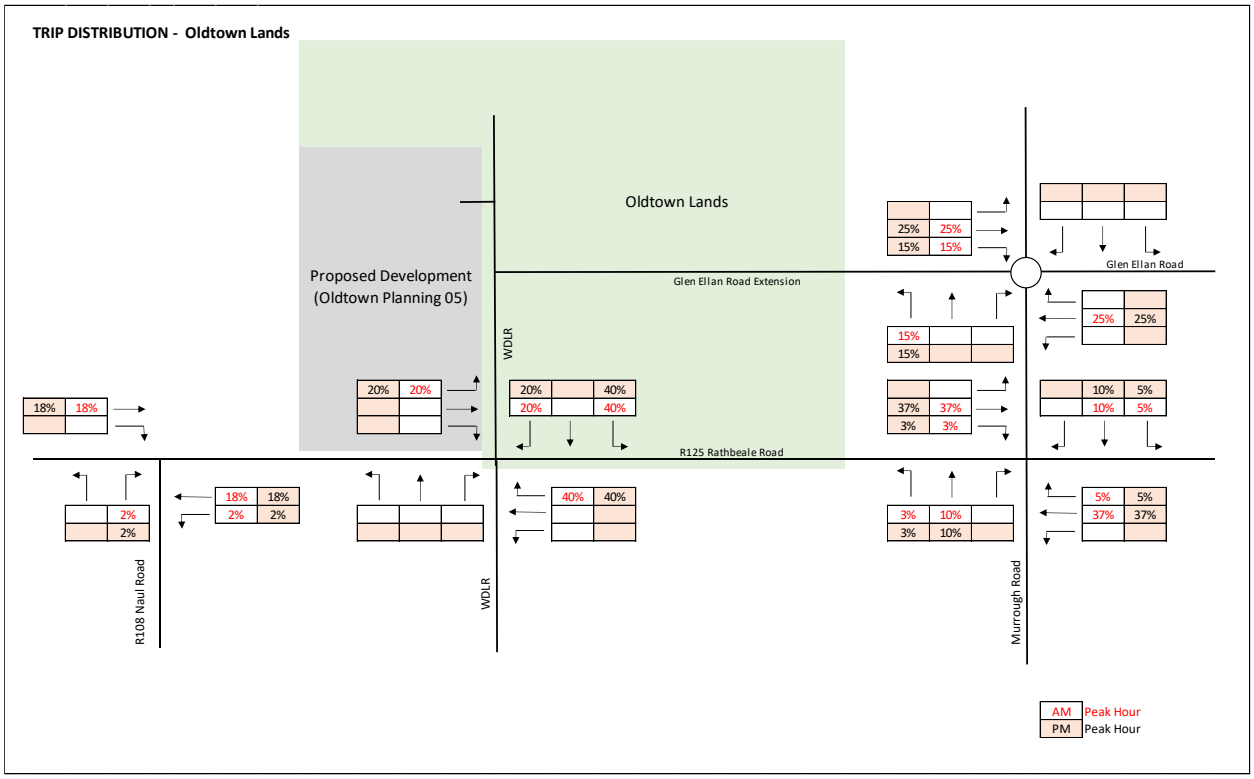


Figure 17 | *Trip Distribution at Assessed Junctions – Oldtown Lands.*

2025

As previously described, by the Opening Year of 2025, a total of 1,367 residential units (990 units approved and 377 proposed as part of the subject application) and 1,510 sqm of retail (approved) were assumed to be fully constructed and occupied in Oldtown lands.

These developments, as summarised in Table 12, are estimated to generate a total of 570 vehicle trips in the AM peak hour (182 inbound and 388 outbound) and a total of 594 vehicle trips in the PM peak hour (365 inbound and 229 outbound).

Based on the trip distribution showed in Figure 17 above, these estimated AM & PM vehicle trips were spatially distributed on the local road network and nearby assessed junctions and are presented in Figure 18.

2030

For the future assessment year of 2030, no new developments, apart from those in 2025 (including the subject application – Oldtown Planning 05), are envisaged in Oldtown lands. Therefore, no additional vehicle trips are assumed from Oldtown lands in 2030. Even though it is expected that the percentage use of car is likely to reduce as a result of the implementation of the GDA Cycle Network Plan for short distance commutes (within Swords North West Sector), for the purpose of this assessment, it was considered that the same level of vehicle trips in 2025 will remain in place for 2030.

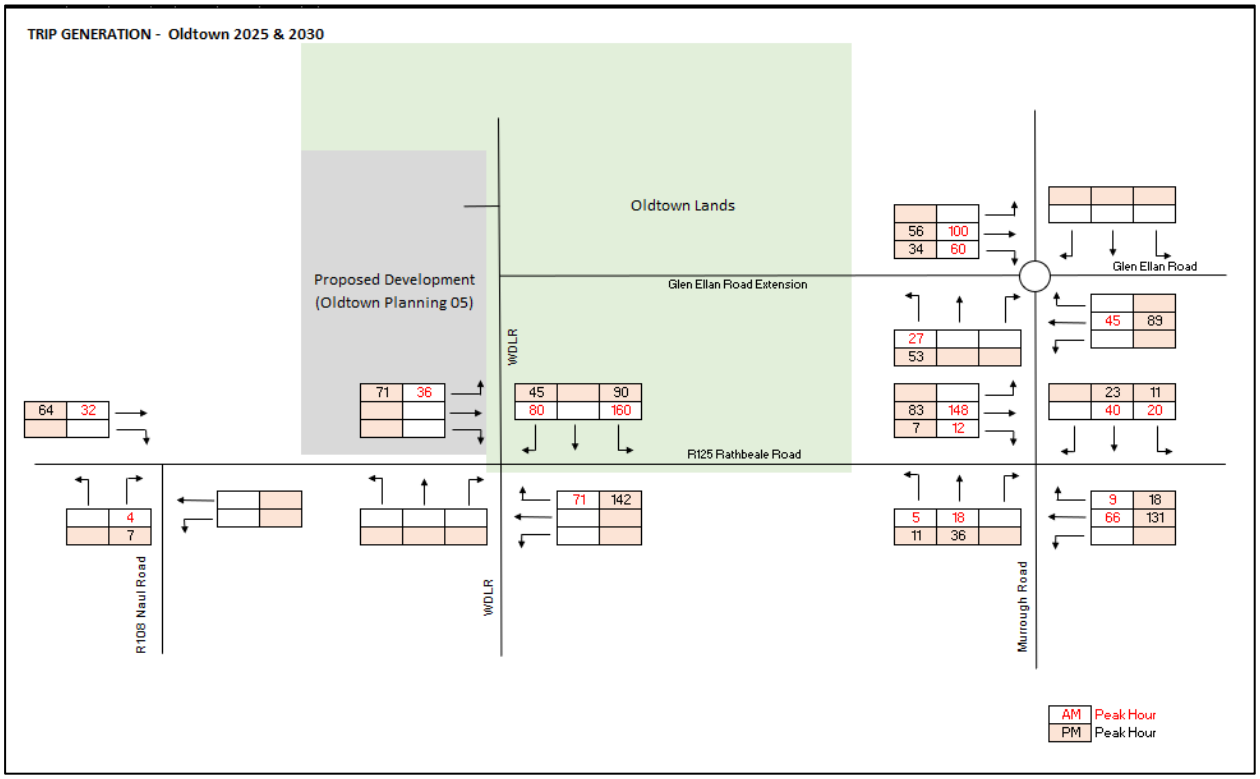


Figure 18 | *Trip Assignment at Assessed Junctions – Oldtown Lands – 2025 & 2030.*

10.2 Mooretown

Main vehicular access to the overall Mooretown lands will be provided via the new Signalised Crossroads between the R125 Rathbeale Road and the Western Distributor Link Road (WDLR). This junction was recently constructed as part of the R125 Rathbeale Road Upgrades scheme, which was subject to a Part 8 application by FCC and are now complete and open to public.

As part of the development works carried out under the Part 8 application, two additional priority-controlled T-junctions to provide access to Mooretown lands were also delivered on R125 Rathbeale Road, one approximately 225 metres east of the new signalised crossroads with the WDLR to provide a secondary access via the Mooretown Phase 1A approved under Plg. Ref. F17A/0128, and the other approximately 280 metres west of the existing signalised crossroads with Murrough Road to facilitate future access to third party lands in Mooretown. The provision of these additional junctions and their locations are in line with the Oldtown-Mooretown LAP Map. The indicative location of both junctions is illustrated in Figure 19 in the form of *blue and white arrows*.

Given the nature and capacity of the Western Distributor Link Road in comparison with the projected Mooretown access roads approaching the two additional junction on R125 Rathbeale Road, and its more direct route from/to the southern portion of the Mooretown lands – including the recently constructed school and potential future Local Centre; as part of this assessment, it was assumed that 70% of the overall vehicle trips to/from the Mooretown developments will use the WDLR whilst the remaining 30% will use the other two access junctions. Of the 70% using the WDLR, 15% was assumed to turn left and travel westward along R125 Rathbeale Road, 10% was assumed to cross the R125 Rathbeale Road and use Glen Ellan Road to travel east and 45% was assumed to turn right and travel east along R125 Rathbeale Road. Of the 30% using the two additional junctions, 5% was assumed to travel west and 25% east along R125 Rathbeale Road. Trip distribution percentage for the signalised crossroads between R125 Rathbeale Road and Murrough Road and the priority T-junction between R125 Rathbeale Road and R108 Naul Road, were

generally calculated using the base surveyed flows and associated turning movements. These percentages are shown in Figure 20.

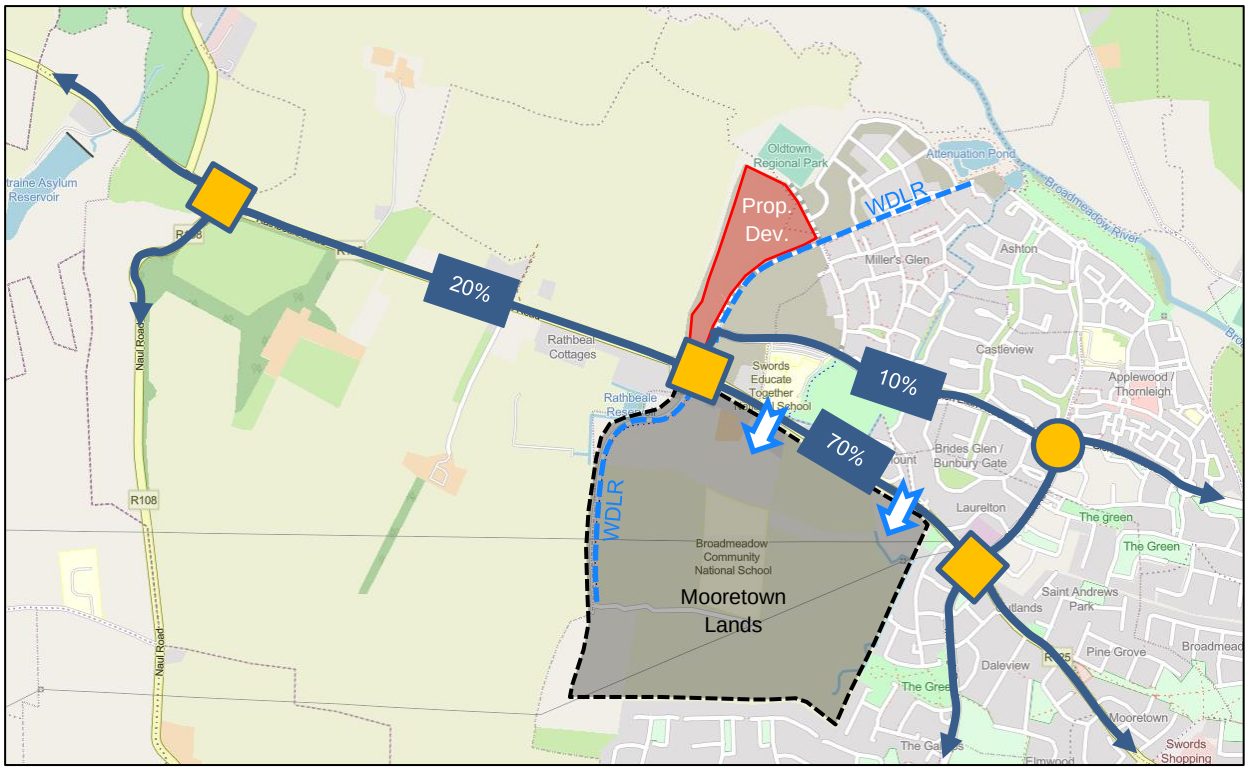


Figure 19 | *Trip Distribution – Mooretown Lands.*

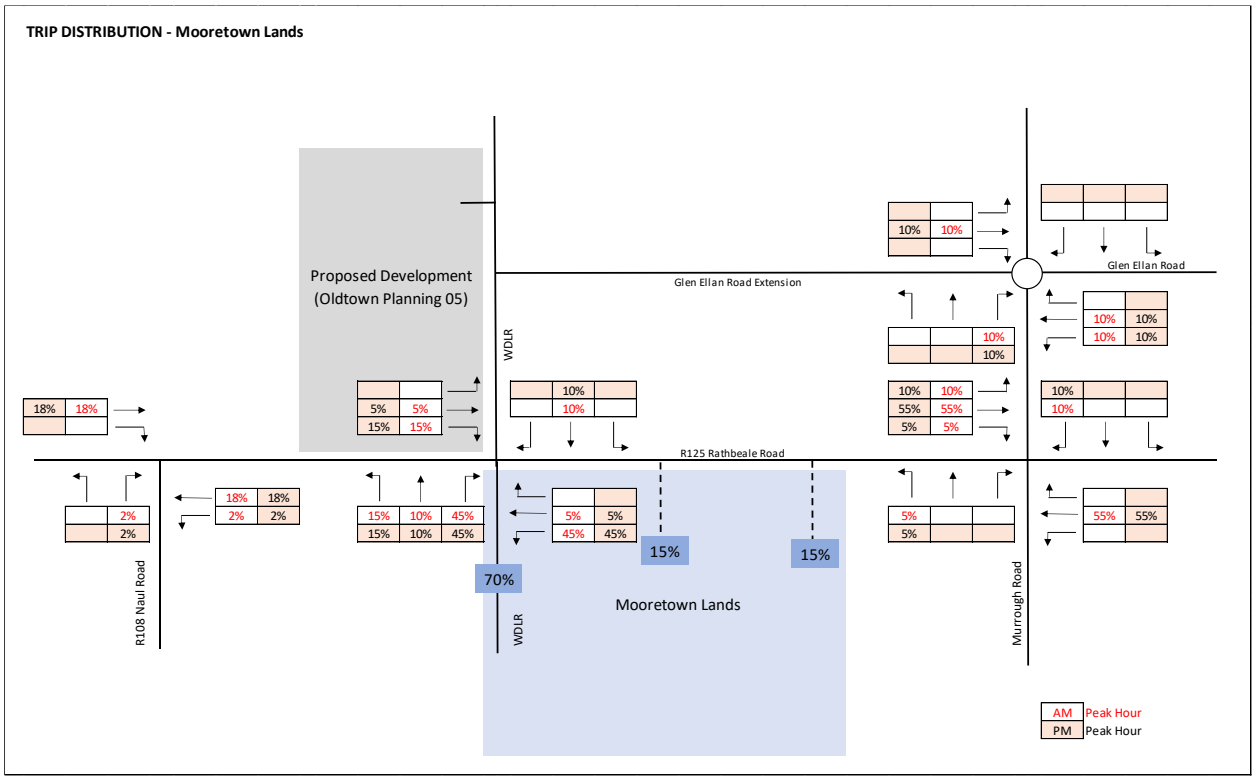


Figure 20 | *Trip Distribution at Assessed Junctions – Mooretown Lands.*

2025

As previously described, by the Opening Year of 2025, it is assumed that a total of 521 residential units (approved) and a 1,624-pupil school site (approved and constructed) will be fully constructed, occupied and operational in Mooretown lands.

These developments, as summarised in Table 12, are estimated to generate a total of 787 vehicle trips in the AM peak hour (347 inbound and 440 outbound) and a total of 193 vehicle trips in the PM peak hour (123 inbound and 70 outbound).

Based on the trip distribution showed in Figure 20 above, these estimated AM & PM vehicle trips were spatially distributed on the local road network and nearby assessed junctions and are presented in Figure 21.

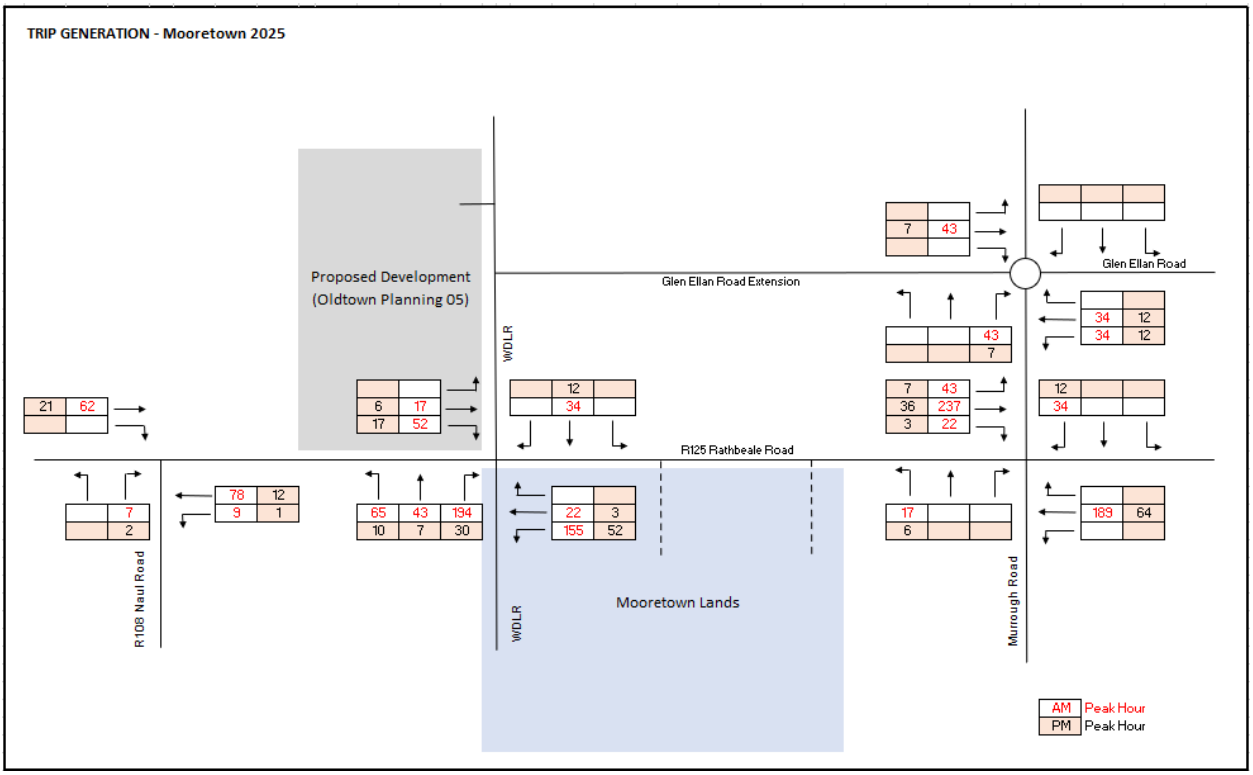


Figure 21 | *Trip Assignment at Assessed Junctions – Mooretown Lands – 2025.*

2030

In accordance with the Oldtown-Mooretown LAP and the quantum of residential and commercial developments set out within that document, it was assumed that 1,300 new residential units, 7,500 sqm of new retail development and 2,500 sqm of new commercial (non-retail) development - all subject to future planning application and approval, will be fully constructed, occupied and operational in Mooretown lands by the end of the 2030.

The trip generation estimated for these additional developments, when summed with the estimated trips for Mooretown in 2025, equates to a total of 1,621 vehicle trips in the AM peak hour (684 inbound and 937 outbound) and a total of 1,200 vehicle trips in the PM peak hour (688 inbound and 512 outbound).

Based on the trip distribution showed in Figure 20 above, these estimated 2030 AM & PM vehicle trips were spatially distributed on the local road network and nearby assessed junctions and are presented in Figure 22.

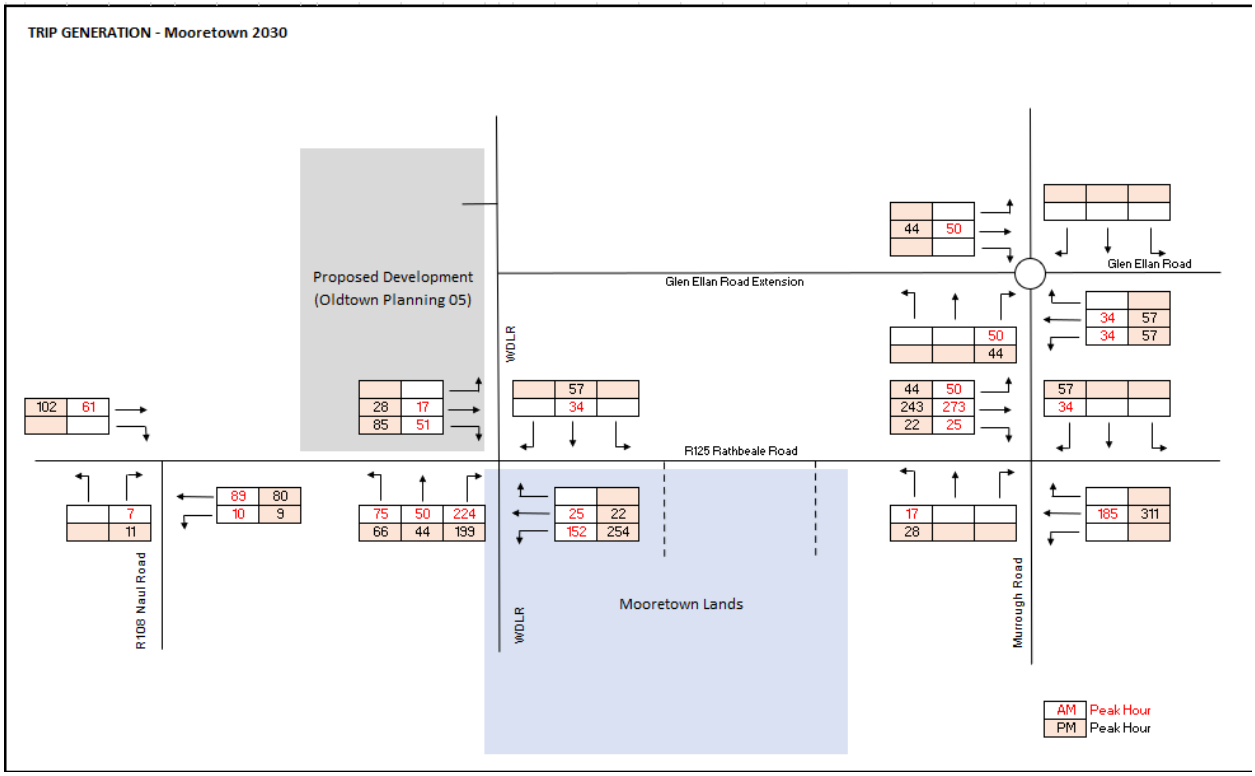


Figure 22 | *Trip Assignment at Assessed Junctions – Mooretown Lands – 2030.*

11. Forecast Traffic

11.1 Baseline Traffic 2022 (Extrapolated)

For the purpose of establishing the baseline year of 2022, the peak hour flows taken from the traffic surveys presented in Section 8.1 and illustrated in Figure 12 have been factored up to 2022 and the results are presented in Figure 23. As described earlier in Section 8.1, historic traffic data from 2005/2006, 2017 and 2019 have been used.

The background traffic growth rates used to factor up the 2005/2006, 2017 and 2019 surveyed traffic movements are in accordance with the *'Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates'* within the TII Publications – Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (May 2019). These are:

- 1.293 (Central Growth) growth factor from 2005/2006 to 2022.
- 1.084 (Central Growth) growth factor from 2017 to 2022.
- 1.049 (Central Growth) growth factor from 2019 to 2022.

Figure 23 below illustrates the AM and PM baseline traffic flows for the base year of 2022.

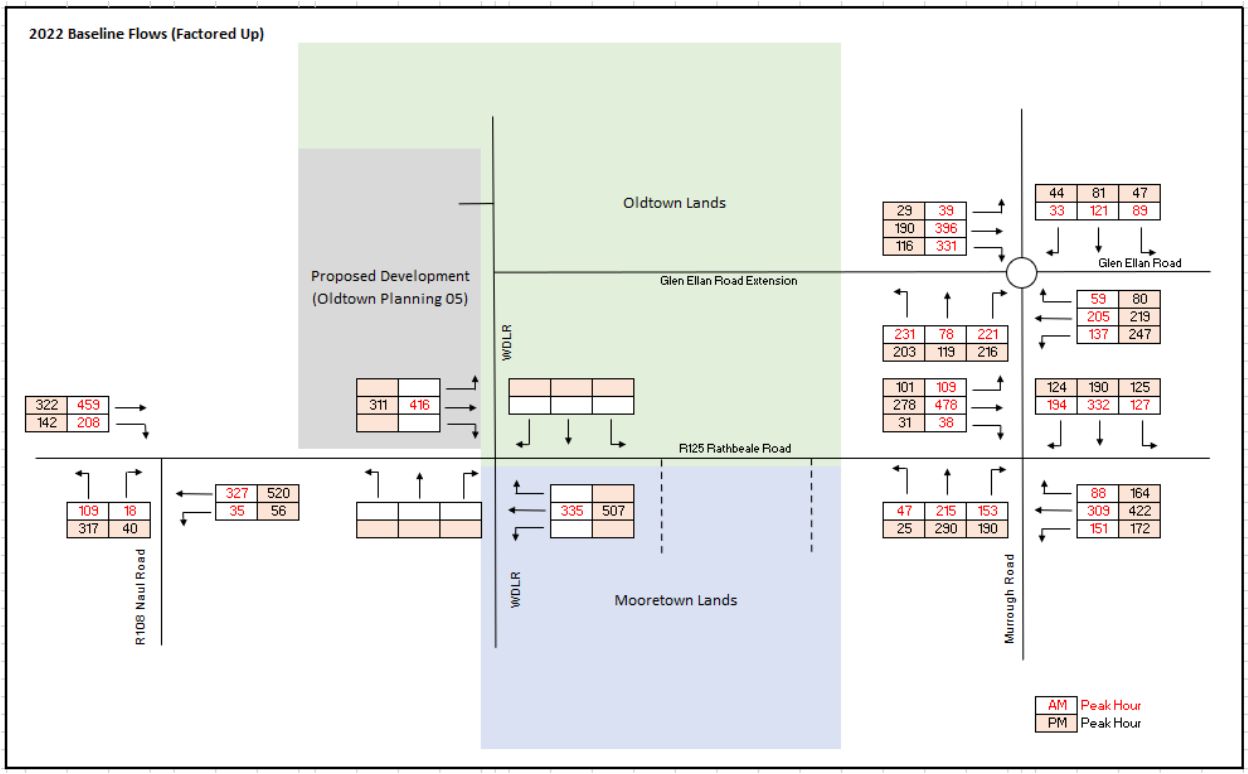


Figure 23 | *2022 Baseline Traffic (Extrapolated Flows).*

11.2 Future Traffic Growth Rates

It has been assumed within this Traffic and Transport Assessment that the subject development (Oldtown Planning 05) will be constructed over a period of approximately 3 years. Therefore, the assumed year of opening is 2025.

In line with the 'Traffic and Transport Assessment Guidelines (May 2014)' which this TTA is based on, the surveyed junctions were also assessed for the future design years of 2030 (Opening Year +5 Years) and 2040 (Opening Year +15 Years).

The background traffic growth used to factor up the 2022 baseline flows are also in accordance with the '*Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates'* within the TII Publications – Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (May 2019). These are:

- 1.044 (Low Sensitivity Growth) growth factor from 2022 to 2025.
- 1.123 (Low Sensitivity Growth) growth factor from 2022 to 2030.
- 1.162 (Low Sensitivity Growth) growth factor from 2022 to 2040.

It is recognised that the Oldtown-Mooretown LAP (principally Mooretown) is one of the largest undeveloped areas in the North-West Sector of Swords with high potential of producing a large number of trips specially during the AM and PM peak hours - this level of trips was detailed previously in Section 9.

As a large number of trips in the local area is expected be generated by these lands and the potential level of trips associated with them is detailed under the Trip Generation section of this report, it was considered reasonable to use Low Sensitivity Growth rates to factor up the future baseline traffic for the future years of 2025, 2030 and 2040.

Figure 24 below illustrates the forecast traffic for the future year of 2040, which includes the baseline flows factored up with the low sensitivity growth rate above, and the trips generated by the Oldtown and Mooretown lands.

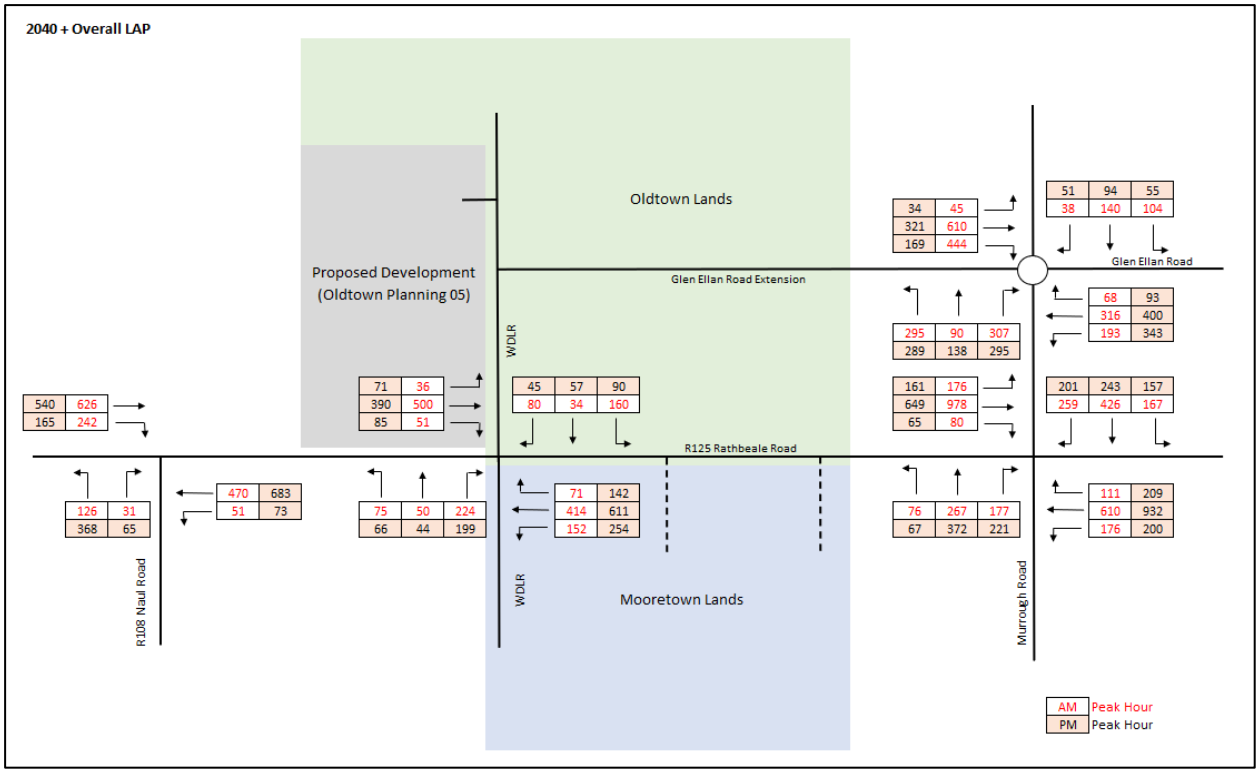


Figure 24 | *2040 Trafic Forecast – Opening Year of Proposed Development +15 Years.*

12. Junction Assessment

12.1 Junctions Modelled

The following junctions have been modelled as part of the subject assessment:

- **Junction 1**: R125 Rathbeale Road/R108 Naul Road (Priority T-junction);
- **Junction 2**: R125 Rathbeale Road/Western Distributor Link Road (Signalised Crossroads);
- **Junction 3**: R125 Rathbeale Road/Murrough Road (Signalised Crossroads);
- **Junction 4**: Glen Ellan Road/Glen Ellan Road Extension (Four-armed Roundabout).

12.2 Modelling Background

There are various modelling software packages available to assess every type of junction. Waterman Moylan uses ARCADY, TRANSYT and PICADY to analyse roundabouts, signalised and priority junctions, respectively.

ARCADY is a software for modelling roundabouts. This programme utilises roundabouts geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the roundabout.

TRANSYT (Traffic Network Study Tool) software is a widely accepted software for modelling signalled controlled junctions. This programme utilises the phases input by the user and optimises their timings over a cycle time. The outputs of a TRANSYT assessment include a Degree of Saturation percentage (DOS%) figure and queue length for each link on the road network.

PICADY is a software for modelling priority-controlled junctions. This programme utilises junction's geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the junction.

Typically, a junction is said to be working satisfactorily when the DOS% or RFC of each link does not exceed 90%/0.90. Acceptable DOS% or RFC values are considered to be in the range of 80%/0.8 to 100%/1.0 with higher values indicating restrained movements.

12.3 Assessment Scenarios

The performance of the junctions has been analysed for the critical AM Peak Hour and PM Peak Hour (08:00 – 09:00 and 17:00 – 18:00) for the following scenarios:

- **2022 (Base Year)**: Surveyed Flows factored up to 2022 Baseline Flows.
- **2025:** 2022 Baseline Flows factored up to 2025.
- **2025 + LAP Developments**: 2025 Flows + Constructed, Approved and Proposed Developments in Oldtown-Mooretown LAP.
- **2030**: 2022 Baseline Flows factored up to 2030.
- **2030 + Overall LAP**: 2030 Flows + Overall Oldtown-Mooretown LAP Developments.
- **2040**: 2022 Flows factored up to 2040.
- **2040 + Overall LAP**: 2040 Flows + Overall Oldtown-Mooretown LAP Developments.

12.4 Modelling Results

12.4.1 Junction 1: R125 Rathbeale Road / R108 Naul Road

Junction 1 is an existing three-armed priority-controlled junction located to the west of the proposed development site. This junction has been modelled based on its current configuration and the PICADY analysis results are summarise in Table 13 below. The arms of the junction were labelled as follows within the PICADY model:

- Arm A: R125 Rathbeale Road (E);
- Arm B: R108 Naul Road (S);
- Arm C: R125 Rathbeale Road (W).

Stream	AM Peak (08:00 to 09:00)		PM Peak (17:00 to 18:00)	
	Queue (veh.)	RFC	Queue (veh.)	RFC
2022				
Stream B-C	0.2	0.16	1.2	0.54
Stream B-A	0.1	0.06	0.2	0.14
Stream C-AB	1.9	0.54	0.9	0.37
2025				
Stream B-C	0.2	0.17	1.3	0.57
Stream B-A	0.1	0.06	0.2	0.16
Stream C-AB	2.2	0.58	1.0	0.40
2025 + LAP Developments				
Stream B-C	0.2	0.18	1.4	0.59
Stream B-A	0.1	0.10	0.3	0.21
Stream C-AB	3.2	0.65	1.3	0.42
2030				
Stream B-C	0.2	0.19	1.7	0.64
Stream B-A	0.1	0.07	0.2	0.20
Stream C-AB	3.2	0.66	1.3	0.44
2030 + Overall LAP Developments				
Stream B-C	0.3	0.20	2.3	0.70
Stream B-A	0.1	0.12	0.6	0.36
Stream C-AB	4.9	0.74	2.1	0.53
2040				
Stream B-C	0.2	0.20	2.0	0.67
Stream B-A	0.1	0.07	0.3	0.22
Stream C-AB	3.6	0.69	1.4	0.47
2040 + Overall LAP Developments				
Stream B-C	0.3	0.21	2.8	0.74
Stream B-A	0.1	0.13	0.7	0.41
Stream C-AB	6.2	0.78	2.4	0.56

***Table 13** | Junction 1 - PICADY Analysis Results.*

The analysis results in Table 13 indicate that the Junction 1 is currently operating well within capacity during both peak periods, with the highest RFC at 0.54 and a corresponding queue of 1.9 vehicle during the AM peak period and a maximum RFC at 0.54 with a corresponding queue of 1.2 vehicle recorded for the PM.

For the future assessment year of 2040, with the baseline traffic factored up and the inclusion of the trips generated by the overall Oldtown Mooretown LAP lands (including the proposed development), the subject junction would continue to operate within capacity during both peak hours, with the highest RFC at 0.78

and a corresponding queue of 6.2 vehicles during the AM and with the highest RFC at 0.74 and a corresponding queue of 2.8 vehicles recorded for the PM.

Full assessment of Junction 1 has been provided in Appendix C.

12.4.2 Junction 2: R125 Rathbeale Road / Western Distributor Link Road

Junction 2 is a recently constructed signalised crossroads located immediately south of the proposed development site. This junction has been modelled based on its current configuration and the TRANSYT analysis results are summarise in Table 14 below. The arms of the junction were labelled as follows within the TRANSYT model:

- Arm A: R125 Rathbeale Road (E);
- Arm B: WDLR (S);
- Arm C: R125 Rathbeale Road (W);
- Arm D: WDLR (N).

Arm	Mov.	AM Peak (08:00 to 09:00)		PM Peak (17:00 to 18:00)	
		Queue (veh.)	DOS%	Queue (veh.)	DOS%
2025 + LAP Developments					
A	S/L	14.24	62	13.16	54
	R	2.51	50	4.71	53
B	S/L	3.23	32	0.55	14
	R	6.19	54	0.99	24
C	S/L	12.71	57	7.93	37
	R	1.75	36	0.50	6
D	S/L	6.33	58	3.38	47
	R	2.32	22	1.39	19
2030 + Overall LAP					
A	S/L	15.35	65	24.27	79
	R	2.51	50	5.47	72
B	S/L	3.74	35	3.90	50
	R	7.28	60	8.66	86
C	S/L	13.90	61	9.38	42
	R	1.71	36	2.83	43
D	S/L	6.46	61	6.18	80
	R	2.35	24	1.42	23
2040 + Overall LAP					
A	S/L	15.75	67	25.46	81
	R	2.51	50	5.47	72
B	S/L	3.74	35	3.70	50
	R	7.28	60	8.66	86
C	S/L	14.52	63	9.51	43
	R	1.71	36	2.83	43
D	S/L	6.46	61	6.18	80
	R	2.35	24	1.42	23

***Table 14** | Junction 2 - TRANSYT Analysis Results.*

The analysis results in Table 14 indicate that, the recently constructed Junction 2, with the inclusion of the trips estimated for the constructed, approved and proposed developments in the LAP lands, would operate within capacity for the assessment year of 2025 + LAP Developments during both peak hours, with the highest DOS at 62% and a corresponding queue of 14.30 vehicles during the AM, and with the highest DOS at 55% and a corresponding queue of 13.57 vehicles during the PM.

For the future assessment year of 2040, with the baseline flows factored up and the inclusion of the trips generated by the overall LAP (including the proposed development), the results indicate that Junction 2 would continue to operate within capacity during both peak hours, with the highest DOS at 91% and a corresponding queue of 17.48 vehicles during the AM, and the highest DOS at 92% and a corresponding queue of 11.21 vehicles recorded for the PM.

Full assessment of Junction 2 has been provided in Appendix C.

12.4.3 Junction 3: R125 Rathbeale Road / Murrough Road

Junction 3 is an existing signalised crossroads located southeast of the proposed development site. This junction has been modelled based on its current configuration and the TRANSYT analysis results are summarise in Table 15 below. The arms of the junction were labelled as follows within the TRANSYT model:

- Arm A: Glen Ellan Road (NE);
- Arm B: R125 Rathbeale Road (SE);
- Arm C: Murrough Road (SW);
- Arm D: R125 Rathbeale Road (NE).

Arm	Mov.	AM Peak (08:00 to 09:00)		PM Peak (17:00 to 18:00)	
		Queue (veh.)	DOS%	Queue (veh.)	DOS%
2022					
A	S/L	17.22	87	17.36	98
	R	5.32	35	3.79	37
B	S/L	22.33	97	27.69	97
	R	3.61	70	8.50	91
C	S/L	10.77	86	16.77	97
	R	4.85	48	6.17	56
D	S	11.99	76	3.65	36
	R	1.47	16	1.46	11
	L	0.82	8	0.79	8
2025					
A	S/L	18.23	88	21.62	103
	R	5.54	36	3.99	39
B	S/L	27.95	101	34.67	102
	R	4.86	85	10.04	95
C	S/L	11.88	89	20.53	101
	R	5.10	50	6.56	59
D	S	13.26	80	3.90	38
	R	1.47	18	1.46	11
	L	0.85	9	0.82	8

Table 15 | *Junction 3 - TRANSYT Analysis Results.*

The analysis results in Table 15 indicate that the Junction 3 is currently operating at capacity during both peak hours, with the highest DOS at 97% and a corresponding queue of 22.33 vehicles during the AM peak hour and a maximum DOS at 97% with a corresponding queue of 27.69 vehicles recorded for the PM.

For the assessed year of 2025, even without the inclusion of any new development trips, the results indicate that Junction 3 would operate above capacity during both peak hours, with the highest DOS at 101% and a corresponding queue of 27.95 vehicles during the AM, and with the highest DOS at 103% and a corresponding queue of 21.62 vehicles during the PM.

The Oldtown-Mooretown LAP acknowledges that, at the time of preparing the LAP document in 2010, this junction was already operating at capacity with the critical arm operating at 89% of the available capacity and sets out plan to modify this junction.

It is recognised by the Council that R125 Rathbeale Road is one of the critical routes currently serving the Swords Northwest area, including the Oldtown and Mooretown lands.

It is understanding that the development of Oldtown and Mooretown lands without any intervention to the transportation infrastructure is likely to increase the current pressures on R125 Rathbeale Road and consequently oversaturate its intersections with other important links, which are currently working at or above their capacities. Rathbeale Road / Murrough Road (Junction 3) is definitely one of the most affected junctions.

With the objective to update and refine the development strategy in the overall South Fingal area in terms of transportation, Fingal County Council commissioned SYSTRA to carry out the South Fingal Transport Study. This study, which includes an extensive assessment of the Swords North West area – where Oldtown-Mooretown LAP lands are situated, was published in February 2019 and will form the basis for future transportation development in the medium and long terms.

With the recommendations included as part of the SYSTRA assessment of the Swords North West area (presented later in Section 13), it is estimated that the overall traffic increase and impact arising from the new developments in North West Sector (including the Oldtown-Mooretown LAP lands) will not be of a scale that would indicate a requirement for additional road capacity.

It is noted that Junction 3 has been part upgraded as part of the LIHAF funded works to the Rathbeale Road via the provision of a new right hand turn lane on the western approach to the existing Murrough Road Junction and it is further noted it has been agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022, that further wider infrastructure upgrade works, including that of the Murrough Road Junction 3, do not form part of the remit of the applicant.

12.4.4 Junction 4: Glen Ellan Road Roundabout

Junction 4 is an existing four-armed priority-controlled roundabout located east of the proposed development site. This roundabout has been modelled based on its current configuration and the ARCADY analysis results are summarise in Table 16 below. The arms of the roundabout were labelled as follows within the ARCADY model:

- Arm 1: Glen Ellan Road (E);
- Arm 2: Glen Ellan Road (S);
- Arm 3: Glen Ellan Road (W);
- Arm 4: Northern Arm (N).

The analysis results in Table 16 indicate that Junction 4 is currently operating well within capacity during both peak hours, with the highest RFC at 0.58 and a corresponding queue of 1.4 vehicle during the AM and a maximum RFC at 0.44 with a corresponding queue of 0.8 vehicle recorded for the PM.

For the future assessed year of 2040, with the inclusion of the estimated trips to/from the overall Oldtown Mooretown LAP development, the results indicate Junction 4 would operate at capacity during the AM peak hour, with the highest RFC at 0.89 and a corresponding queue of 7.4 vehicles, and within capacity during the PM peak hour, with the highest RFC at 0.70 and a corresponding queue of 2.3 vehicles recorded.

Full assessment of Junction 4 has been provided in Appendix C.

Arm	AM Peak (08:00 to 09:00)		PM Peak (17:00 to 18:00)	
	Queue (veh.)	RFC	Queue (veh.)	RFC
2022				
Arm 1	0.6	0.36	0.8	0.44
Arm 2	0.7	0.43	0.8	0.44
Arm 3	1.4	0.58	0.4	0.26
Arm 4	0.6	0.39	0.3	0.20
2025				
Arm 1	0.6	0.39	0.9	0.46
Arm 2	0.8	0.45	0.9	0.47
Arm 3	1.6	0.61	0.4	0.28
Arm 4	0.7	0.42	0.3	0.21
2025 + LAP Developments				
Arm 1	1.0	0.51	1.3	0.56
Arm 2	1.1	0.53	1.2	0.54
Arm 3	3.7	0.79	0.6	0.36
Arm 4	1.2	0.55	0.3	0.23
2030				
Arm 1	0.8	0.45	1.0	0.50
Arm 2	1.0	0.49	1.0	0.51
Arm 3	2.9	0.75	0.4	0.30
Arm 4	1.2	0.55	0.3	0.24
2030 + Overall LAP				
Arm 1	1.2	0.55	2.1	0.68
Arm 2	1.3	0.58	1.8	0.64
Arm 3	5.8	0.86	0.7	0.42
Arm 4	2.0	0.67	0.4	0.27
2040				
Arm 1	0.8	0.44	1.1	0.52
Arm 2	1.0	0.51	1.1	0.53
Arm 3	2.3	0.70	0.5	0.32
Arm 4	1.1	0.53	0.3	0.25
2040 + Overall LAP				
Arm 1	1.3	0.57	2.3	0.70
Arm 2	1.5	0.60	2.0	0.67
Arm 3	7.4	0.89	0.8	0.44
Arm 4	2.5	0.72	0.4	0.28

Table 16 | *Junction 4 - ARCADY Analysis Results.*

13. South Fingal Transport Study (SFTS) – Swords Sub Report (2019)

In order to update and refine the development strategy in South Fingal in terms of transportation, in September 2017, Fingal County Council commissioned SYSTRA to carry out the South Fingal Transport Study. This study was published/completed in February 2019 and will form the basis for future transportation development to 2027 in Fingal County Council. As part of this study SYSTRA prepared a regional transportation model of the Swords Area.

This model includes the strategic transportation demand and infrastructure in the Swords North West area and as such provides the strategic traffic and transport assessments for the area in the medium and long terms. The SFTS model therefore forms basis of the local road infrastructure including the Swords Western Distributor Road (SWDR) and its northern and southern extensions.

The regional transportation modelling was carried out by SYSTRA using the NTA Eastern Regional Model (ERM). This is a sophisticated strategic model which includes all modes of transport (including active modes) and provides for extensive predictive modelling based on demand forecasting and supply changes in terms of new roads, cycle and public transport infrastructure.

The model has been calibrated and used for predictive analysis of trip distributions by mode, network analysis to identify journey times, junction and road volumes, public transport line flows, etc. for various scenarios of development and infrastructure provision.

In addition, local area modelling was also carried out by SYSTRA to assess the impact of various scenarios of road infrastructure within the four study areas. Oldtown Mooretown lands fall within the Swords North West area.

Section 4.2 of the *South Fingal Transport Study – Swords Sub Report* sets out details of the Local Area Model (LAM) which was developed based on the Eastern Regional Model (ERM) demand and modal choice.

As set out in Section 4.3 of the same report, various infrastructure scenarios were tested using a combination of the ERM and the LAM. The tested scenarios are presented in Figure 25 below – extracted from *Figure 4.1 Table of Model Scenarios* within the SFTS – Swords Sub Report.

Scenario Name	DoMin 2016	DoMin 2027	GDA Strategy	GDA Strategy + MetroLink	CDP Roads
Growth / Schemes	No Growth (2016)	Recognised Housing	Recognised Housing	Recognised Housing	Recognised Housing
		Metro Intensification	Metro Intensification	Metro Intensification	Metro Intensification
Bus Connect			☑	☑	☑
Metro Link				☑	☑
CDP Roads					☑

Figure 25 | *Tested Scenarios – Extracted from Figure 4.1 of SFTS – Swords Sub Report.*

A description of the tested scenarios, as detailed in *Swords Sub Report*, are presented below:

> *"**DoMin** assumed no changes are made to the transport network; this scenario, therefore, represents what could happen on the transport network due to population and employment growth if no improvements were made to accommodate the increase travel.*
>
> ***GDA Strategy** assumes the NTA GDA Strategy is implemented with respect to its flagship bus network improvement programme, but without MetroLink or the GDA Cycle Network Plan in Swords.*
>
> ***CPD Roads** includes all potential future road schemes in the main strategic model run, on top of the GDA Strategy Scenario above."*

The road scheme tested includes the Swords Western Distributor Road (SWDR) and its northern and southern extensions as per Figure 26 – extracted from Figure 5.1 within the *SFTS – Swords Sub Report*.

13.1 Swords North West – Trip Generation

It is recognised in the *SFTS – Swords Sub Report* that Swords North West is a key area due to the increased demands being placed on the network in the short term by Oldtown and Mooretown lands. It is also recognised in the study that R125 Rathbeale Road and Glen Ellan Road are two of the critical routes currently serving the area.

Section 4.4.2.1 of the *South Fingal Transport Study – Swords Sub Report* recognises that for the 2027 DoMin (without any network intervention in place), the Swords North West area will face a large increase in the use of car trips, which will result in increased pressures on Glen Ellan Road and R125 Rathbeale Road.

In the GDA Strategy scenario, with an enhanced bus network in place, the results indicate that car trips will reduce considerably whilst public transport will increase. This level of car trips, however, with no further interventions, will remain higher than the current levels.

In summary, the study recognises that, even with an enhanced bus network in place, the extra car trips generated by Oldtown/Mooretown will moderately increase pressures on Glen Ellan Road and R125 Rathbeale Road.

13.2 Swords North West – Trip Destination by Mode

Section 4.4.3.2 of the *South Fingal Transport Study – Swords Sub Report* sets out the general travel patterns of travel by mode from Swords North West within Swords and from the rest of the modelled area.

The general travel patterns estimates that "of trips originating from the North West area of Swords, the largest destination is within the same sector, i.e., the trip starts and ends in Swords North West area", and "within this sector, it is estimated that around 2,500 walk or cycle and nearly 2,000 are by car".

It is therefore recognised by SYSTRA that a key intervention on top of the enhanced bus network, that will potentially reduce car trips on the major links (Rathbeale Road and Glen Ellan Road) in Swords North West area, is the provision of high standards cycling infrastructure.

As presented earlier in the subject TTA, a cycle infrastructure on Rathbeale Road is substantially complete along both sides of the carriageway from the new signal-controlled junction with Western Distributor Link Road (Swords Western Distributor Road) to the eastern edge of the LAP lands.

13.3 Swords Western Distributor Road

It is recognised in the *South Fingal Transport Study – Swords Sub Report* that the northern extension of the Swords Western Distributor Road, which forms a spine access route through the Oldtown and

Mooretown LAP areas, is a very important link for the area and should be progressed to enable access to the future Estuary MetroLink Park and Ride Station, particularly to serve active travel to the station and to provide additional resilience to the local network in the context of diverting traffic from Main Street.

13.4 Swords North West - SFTS Recommendation

Based on the various modelling scenarios undertaken by SYSTRA, some recommendations for the Swords North West area have been outlined. These are:

***"SFTS Recommendation 1**: Increasing the number of traffic lanes on Balheary Road is not required in the short term. However, providing bus lanes to enable a high frequency service to run reliably and maintain bus priority through junctions is required to encourage bus use and to limit car use near to present day levels."*

***"SFTS Recommendation 2**: In addition or complementary to the services outlines in the Bus Connects consultation document, a feeder service should be provided to Oldtown and Mooretown through the developments and onwards to Swords via the Glen Ellan Road."*

***"SFTS Recommendation 3**: Rathbeale and Brackenstown Roads should be prioritised to support the advancement of the GDA Cycle Network Plan in Swords. As primary cycle routes in Swords, they should be developed to the highest standards in accordance with the National Cycle Manual."*

***"SFTS Recommentation 5**: It is crucial to provide continuous high quality bus and cycle priority along Ardcian Park to Castleview Ext./Glen Ellan Rd/Balheary Road route, and the sections of the Forest Road and Rathbeale Road that are subject to congestion, in order to provide the necessary priority to attract a sufficient share of trips by bus."*

***"SFTS Recommendation 6**: The Swords Western Distributor Road will form a crucial link from north west Swords to the future Estuary MetroLink station and Park and Ride. From Oldtown-Mooretown to Estuary the road alignment should consider similar design principles as set out in the LAP/Masterplans. Its southern extension to Brackenstown Road/Ward River Valley should be considered as a pedestrian and cycling only route."*

13.5 Summary

In summary, the *South Fingal Transport Study – Swords Sub Report* concludes that:

(1) There is a significant potential to increase walking and cycling modes of transport within Swords North West area by providing high standards and prioritised cycling infrastructures along Rathbeale Road, Glen Ellan Road, Brackenstown Road and Forest Road.

(2) It is crucial to provide continuous high-quality bus and cycle priority along key road on the network.

(3) In addition to BusConnects, a feeder service should be provided to Oldtown and Mooretown through the development and onwards Swords via Glen Ellan Road.

(4) The Swords Western Distributor Road would provide additional resilience to the local network in the context of diverting traffic from Main Street, and in addition providing direct access to the MetroLink Park and Ride at Estuary station.

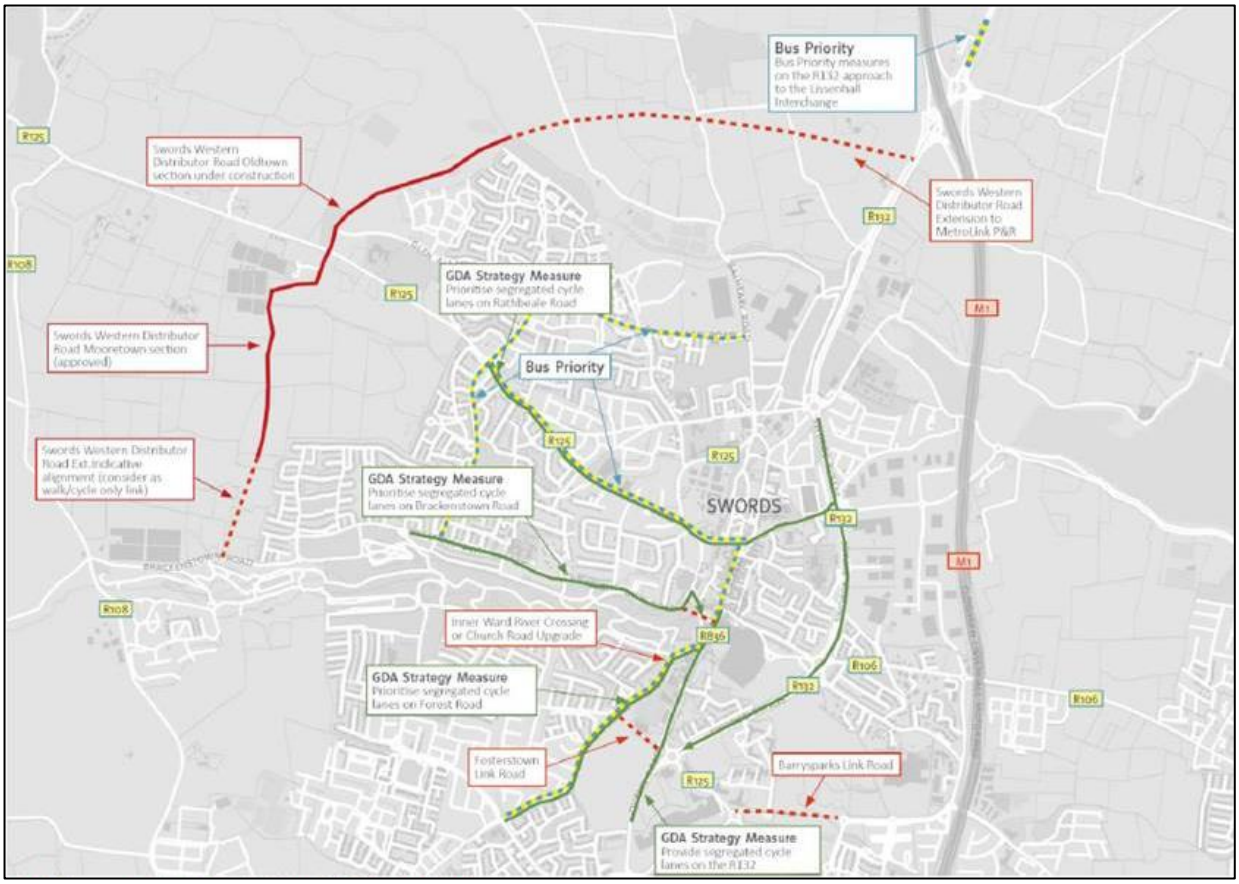


Figure 26 | *Swords Recommendation Summary Map – extracted from Figure 5.1 of the SFTS.*

14. Public Transport Capacity Assessment

14.1 Background and Methodology

The purpose of this chapter is to demonstrate that the public transport serving the area within which the proposed development is located will remain within capacity once all of the committed and proposed development contribution to the service have been completed.

The methodology used in this chapter is set out below.

- Determination of the resident population based on the size and number of residential units proposed.
- Determination of the modal split for the proposed development
- Calculation of the future passenger demand from the proposed development
- Determination of future passenger demand from committed/future developments
- Determination of bus capacity for the time and direction of peak demand
- Determination of passenger loadings from the bus capacity survey
- Determination of spare bus capacity available, if any, to serve the proposed and contiguous developments.

For the purpose of this report and based on experience from a number of surveys, the peak travel time and direction of travel in the Swords area has been assumed to be southbound towards Dublin City Centre during the AM Peak Hour between 07:00 and 08:00 on the weekday.

14.2 Future Passenger Demand

14.2.1 Future Passenger Demand – Oldtown

The future passenger demand for the total Oldtown development will consist of all approved or constructed but not yet occupied developments from Table 5. It is estimated that the number of residents in the Oldtown development be some 2,051 persons as calculated in Table 17.

Site	No. Of Units	1 – Bed (2 – Person)	2 – Bed (3 – person)	3 – Bed (4 – person)	4 – Bed (5 – person)	Total No. of persons
Oldtown 02A	86	6 (12 Persons)	8 (42 Persons)	61 (244 Persons)	11 (55 Persons)	353 Persons
Oldtown 02B	91	4 (8 Persons)	11 (33 Persons)	65 (260 Persons)	11 (55 Persons)	356 Persons
Oldtown 02C	56	4 (8 Persons)	8 (24 Persons)	44 (176 Persons)	-	208 Persons
Oldtown 05*	377	71 (73 Persons)	140 (420 Persons)	149 (596 Persons)	17 (85 Persons)	1,174 Persons

Total	610	85 (101 persons)	167 (519 persons)	319 (1,276 persons)	39 (195 persons)	2,091 persons

Table 17 | *Future Passenger Demand - Oldtown*

Based on the modal split in Section 8.4 of this TTA, some 27% of the residential population equivalent to 565 persons are expects to use public transport for the journey to work or education during the AM Peak between 7 and 10 each weekday.

Of these, 50% or 283 persons are expected to travel during the AM Peak Hour between 7:45 and 8:45. Having regard to the location of the proposed development, 95% are expected to travel south towards the City Centre and 5% to the north

14.2.2 Future Passenger Demand – Mooretown

The future passenger demand for the total Mooretown development will consist of all approved from Table 5. It is estimated that the number of residents in the subject site be some 3,385 persons as calculated in Table 18.

Site	No. Of Units	1 – Bed (2 – Person)	2 – Bed (3 – person)	3 – Bed (4 – person)	4 – Bed (5 – person)	Total No. of persons
Mooretown 01	284	20 (40 Persons)	47 (141 Persons)	190 (760 Persons)	27 (135 Persons)	1,076 Persons
Mooretown 02	208	8 (16 Persons)	40 (120 Persons)	118 (472 Persons)	72 (360 Persons)	968 Persons
Mooretown 03	650	65 (130 Persons)	250 (750 Persons)	362 (1,448 Persons)	-	2,328 Persons
Total	1,141	73 (186 Persons)	290 (1,011 Persons)	561 (2,680 Persons)	85 (495 Persons)	4,372 persons

Table 18 | *Future Passenger Demand - Mooretown*

Based on the modal split in Section 8.4 of this TTA, some 27% of the residential population equivalent to 1,180 persons are expects to use public transport for the journey to work or education during the AM Peak between 7 and 10 each weekday.

Of these, 50% or 590 persons are expected to travel during the AM Peak Hour between 7:00 and 8:00. Having regard to the location of the proposed development, 95% are expected to travel south towards the City Centre and 5% to the north.

14.2.3 Future Passenger Demand – Summary

The overall future passenger demand for the combined Oldtown and Mooretown developments will generate 1,468 persons. Due to the location of the proposed development, 95% of the trips are expected to travel south towards Dublin City and the remaining 5% are expected to travel north. Table 19 below shows the summary results.

Source	AM Peak 7 - 10		AM Peak Hour 7.00 – 8.00	
	Northbound	Southbound	Northbound	Southbound
Oldtown	538	28	269	14
Mooretown	1,121	59	561	30
Total	1,659	87	830	44

***Table 19** | Future Passenger Demand - Summary*

14.3 Bus Capacity

Services on the primary bus routes serving the Swords area primarily Routes 197, 41B, 41, 41C, 500, 503, 507 and 500X are provided by various double deck and single deck buses within the Dublin Bus Fleet. The average capacity of a double decker based on information from the Dublin Bus website is 91 passengers as calculated in Table 20 below.

For the purpose of this report, the average capacity of a double decker bus operated by Dublin Bus has been taken as 90 passengers including standing. The average capacity of a single decker will be assumed to be half this capacity.

Fleet Code	No in Fleet	Capacity	Total Capacity
AV	76	91	6,916
AX	192	91	17,472
EV	97	94	9,118
VG	50	88	4,400
GT	160	78	12,480
SG	369	95	35,055
Total	938	91	85,441

***Table 20** | Dublin Bus Capacity*

14.4 Bus Capacity Survey, March 2022

As part of the transport capacity assessment, bus stops near the proposed development were surveyed. The bus capacity surveys were carried out by Waterman Moylan during the AM Peak at three southbound bus stops. Two of the bus capacity surveys were taken on the 1st March 2022 and one bus capacity survey was taken on 25th March 2022. The surveys were taken at the following bus stops:

Bus Stop No. 7145: This bus stop is located south of the proposed development on R125 Rathbeale Road. This bus stop serves the 197 and 41B.

Bus Stop No. 4024: This bus stop is located east of the proposed development on Glen Ellen Road and serves bus routes 41c, 500x, 503, 41x, 43, 507 and 506x.

Bus Stop No. 6310: This bus stop is located east of the proposed development on Glen Ellen Road and serves the bus routes 142, 506x, 41x, 505, 500x, 503, 142, 42D and 507.

The purpose of the surveys at this location was to determine the spare capacity available for persons from the subject development to board at these locations. All three bus stops are near the proposed development and allow access to different locations around Dublin.

14.4.1 Results of the Bus Survey

The results of the bus survey are presented in Table 21. The results recorded a significant spare capacity of 1,357 Passengers between 07:00 to 08:00 compared to the predicted demand of 830 passengers from the combined developments of Oldtown and Mooretown travelling southbound.

Time	No of Buses	Bus Capacity	No of Passengers	Spare Capacity
07:00 - 07:15	3	180	35	145
07:15 - 07:30	12	945	320	626
07:30 - 07:45	9	690	242	448
07:45 - 08:00	5	270	131	139
Total	29	2,085	728	1,357

Table 21 | *Results of the Bus Survey*

14.5 Summary

Based on the predicted demand and capacity survey, the bus services serving the proposed development have more than adequate spare capacity to the proposed development now and into the future.

15. Car Parking

15.1 Fingal Development Plan 2017 - 2023

Standards for car parking in new developments are set out in Table 12.8 of the Fingal Development Plan 2017 - 2023. Based on that, Table 22 below sets out the parking requirements applicable to the subject proposed development of Oldtown Planning 05.

Land Use	Standard	Norm or Max
House – Urban / Suburban (1 or 2 bedrooms)	1-2 spaces within the curtilage	Norm
House – Urban / Suburban (3 or more bedrooms)	2 spaces within the curtilage	Norm
Apartment / townhouse (1 bedroom)	1 space per unit plus 1 visitor space per 5 units	Norm
Apartment / townhouse (2 bedrooms)	1.5 space per unit plus 1 visitor space per 5 units	Norm
Apartment / townhouse (3+ bedrooms)	2 spaces per unit plus 1 visitor space per 5 units	Norm
Duplex	No standard	-
Creche	0.5 space per classroom	Norm

Table 22 | *Fingal Development Plan 2017–2023 - Car Parking Standards.*

Based on the standards above, Table 23 below, sets out the number of parking spaces required for the subject development.

The duplex units do not fall exactly into any of the categories defined within the Fingal Development Plan. Therefore, the standards for Apartments have been used for the proposed Duplexes.

Unit Type	Dev. Size	Car Parking Spaces Required
2-bed Houses	9 units	9 spaces for residents
3 and 4-bed Houses	164 units	328 spaces for residents
1-bed Apartments	71 units	71 spaces for residents + 14 spaces for visitors
2-bed Apartments	94 units	141 spaces for residents + 19 spaces for visitors
2-bed Duplexes	37 units	56 spaces for residents + 7 spaces for visitors
3-bed Duplexes	2 units	4 spaces for residents + 1 space for visitors
Creche	519 sqm 4 classrooms	2 spaces
Total	377 residential units 519 sqm of Creche (4 classrooms)	609 spaces for residents + 41 spaces for visitors 2 spaces for the Creche

Table 23 | *Fingal Development Plan 2017–2023 - Car Parking Requirement.*

15.2 Design Standards for New Apartments – December 2020

In December 2020, a revised version of the document "Sustainable Urban Housing: Design Standard for New Apartments" was released. The parking standards set out in this document are considerably lower than those contained in the Fingal Development Plan 2017 – 2023 in respect to apartment developments.

Chapter 2 of the Design Standard for New Apartments sets out the following "types of location" which are defined by site's accessibility and proximity to public transport and town/city centres:

"Central and/or Accessible Urban Locations

- *Sites within walking distance (i.e up to 15 minutes or 1,000-1,500m), of principal city centres, or significant employment locations, that may include hospitals and third level institutions;*
- *Sites within reasonable walking distance (i.e. up to 10 minutes or 800-1,000m) to/from high capacity urban public transport stops (such as DART or Luas); and*
- *Sites within easy walking distance (i.e. up to 5 minutes or 400-500m) to/from high frequency (i.e. min 10 minute peak hour frequency) urban bus service.*

Intermediate Urban Locations

- *Sites within or close to i.e. within reasonable walking distance (i.e. up to 10 minutes or 800-1,000m), of principal town or suburban centres or employment locations, that may include hospitals and third level institutions;*
- *Sites within walking distance (i.e. between 10-15 minutes or 1,000-1,500m) of high capacity urban public transport stops (such as DART, commuter rail or Luas) or within reasonable walking distance (i.e. between 5-10 minutes or up to 1,000m) of high frequency (i.e. min 10 minutes peak hour frequency) urban bus services or where such services can be provided;*
- *Sites within easy walking distance (i.e. up to 5 minutes or 400-500m) of reasonably frequent (min 15 minute peak hour frequency) urban bus services.*

Peripheral and/or Less Accessible Urban Locations

- *Sites in suburban development areas that do not meet proximity or accessibility criteria;*
- *Sites in small towns or villages."*

The document also states that the range of locations is not exhaustive and will require further local assessment.

As per the Design Standards for New Apartments – Guidelines for Planning Authorities – December 2020 standards set out above and the location of the proposed development in relation to current and proposed public transport provision, it is understanding that the subject development meets criteria for reasonable grounds to minimise car parking provisions.

15.3 Car Parking Proposed

The number of car parking spaces projected to serve the proposed development is presented in Table 24 below.

It is proposed to provide a total of 600 no. car parking spaces, including spaces for residents, spaces for visitors, spaces for the Creche and also GoCar spaces. According to GoCar, *"carsharing is a sustainable service. By allowing multiple people to use the same vehicle at different times, car sharing reduces car ownership, car dependency, congestion, noise and air pollution. It frees up land which would otherwise be used for additional parking spaces. Most GoCar users only use a car when necessary, and walk and use public transport more often than car owners."*

Parking Block 01		
Apartment Blocks B1, B2, C & Duplex Block F		
Car Spaces	**Rate**	**Location**
81	0.86	On-curtilage/under-croft
Visitor Spaces = 17 GoCar Spaces = 2 **Parking Block 01 Total Spaces = 100 (includes 4 disabled spaces and 10 communal EV spaces)**		
Parking Block 02		
Houses		
Car Spaces	**Rate**	**Location**
18	2	On-curtilage
Duplex & Creche		
Car Spaces / Staff	**Rate**	**Location**
11	1	On-curtilage / On-street
Visitor Spaces = 4 Creche Drop-off Spaces = 5 Shared Visitor / Creche Spaces = 1 **Parking Block 02 Total Spaces = 39 (includes 1 disabled space and 2 communal EV spaces)**		
Parking Block 03		
Houses		
Car Spaces	**Rate**	**Location**
20	2	On-curtilage
22	2	On-street
Visitor Spaces = 3 **Parking Block 03 Total Spaces = 45 (includes 2 communal EV spaces)**		
Parking Block 04		
Houses		
Car Spaces	**Rate**	**Location**
40	2	On-curtilage
Duplex Block C & Block D		
Car Spaces	**Rate**	**Location**
28	1	On-street
Visitor Spaces = 9 **Parking Block 04 Total Spaces = 77 (includes 2 disabled spaces and 4 communal EV spaces)**		
Parking Block 05		
Houses		
Car Spaces	**Rate**	**Location**
54	2	On-curtilage
Duplex Block B		
Car Spaces	**Rate**	**Location**
8	1	On-street
Visitor Spaces = 2 **Parking Block 05 Total Spaces = 64 (includes 1 disabled space and 2 communal EV spaces)**		
Parking Block 06		
Apartment Block A & Duplex Block A		

Car Spaces	Rate	Location
21	1	On-curtilage / Under-croft
45	1	On-street
Visitor Spaces = 14 **Parking Block 06 Total Spaces = 80 (includes 3 disabled spaces and 8 communal EV spaces)**		
Parking Block 07		
Houses		
Car Spaces	**Rate**	**Location**
64	2	On-curtilage
2	2	On-street
Parking Block 07 Total Spaces = 66 (includes 1 communal EV space)		
Parking Block 08		
Houses		
Car Spaces	**Rate**	**Location**
24	2	On-curtilage
4	2	On-street
Visitor Spaces = 3 **Parking Block 08 Total Spaces = 31 (includes 1 communal EV space)**		
Parking Block 09		
Houses		
Car Spaces	**Rate**	**Location**
62	2	On-curtilage
Parking Block 09 Total Spaces = 62		
Parking Block 10		
Houses		
Car Spaces	**Rate**	**Location**
36	2	On-curtilage
Parking Block 10 Total Spaces = 36		
Summary Parking Proposed		
Spaces for Residents = 537 Spaces for Visitors = 49 Spaces for the Creche = 8 Shared Spaces Visitors & Creche = 1 GoCar Spaces = 2 Additional On-street Visitors Parking (Miller's Avenue) = 3 **Overall Parking Proposed = 600 (includes 11 disabled spaces and 30 communal EV spaces)**		

Table 24 | *Proposed Car Parking.*

As can be seen from the above, the proposed Oldtown Planning 05 development is projected to provide a total of 600 car parking spaces distributed over 10 Parking Blocks and 3 additional visitor spaces on Miller's Avenue.

The reduced car parking provision in relation to the parking required under the Fingal Development Plan reflects the location of the development in relation to public transport services and is in line with the Design Standard for New Apartments as summarised in Section 14.2 above.

16. Cycle Parking

16.1 Fingal Development Plan 2017 - 2023

Standards for bicycle parking in new developments are set out in Table 12.9 of the Fingal Development Plan 2017 - 2023. Based on that, Table 25 below sets out the cycle parking requirements applicable to the subject proposed development of Oldtown Planning 05.

Land Use	FDP Standard	Norm or Max
Apartment	1 per unit + 1 visitor space per 5 units	Norm
Creche	0.5 space per classroom	Norm

Table 25 | *Fingal Development Plan 2017 – 2023 - Cycle Parking Standards.*

16.2 Design Standard for New Apartments – March 2018

The following extracts from the "Design Standards for New Apartments – March 2018" summarise the guidelines for cycle parking:

"*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.*"

16.3 Cycle Parking Proposed

The number of cycle parking spaces projected to serve the proposed development is presented in Table 26 below.

Apartment Block A	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	18	18	30		
2 Beds	30	60	70		
3 Beds	0	0			
Total	48	78	100	4	14
Apartment Block B1	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	17	17	17		
2 Beds	15	30	30		
3 Beds	0	0			
Total	32	47	47	2	6
Apartment Block B2	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	17	17	20		
2 Beds	15	30	38		
3 Beds	0	0			
Total	32	17	58	2	6

Apartment Block C	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	11	11	11		
2 Beds	11	22	22		
3 Beds	0	0			
Total	22	33	33	2	4
Duplex Block A	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	9	9	9		
2 Beds	8	16	16		
3 Beds	1	3	3		
Total	18	28	28	2	6
Duplex Block B	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	4	4	4		
2 Beds	4	8	8		
3 Beds	0	0	0		
Total	8	12	12	2	4
Duplex Block C	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	4	4	4		
2 Beds	4	8	8		
3 Beds	0	0	0		
Total	8	12	12	2	4
Duplex Block D	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	10	10	10		
2 Beds	9	18	18		
3 Beds	1	3	3		
Total	20	31	31	3	8
Duplex Block E	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	4	4	4		
2 Beds	4	8	8		
3 Beds	0	0	0		
Total	8	12	12	2	4
Duplex Block F	No. Units	No. Bedrooms	Bikes Provided	Bike Trailers	Visitor Bikes
1 Beds	4	4	5		
2 Beds	4	8	8		
3 Beds	0	0	0		
Total	8	12	13	1	4

***Table 26** | Proposed Cycle Parking – Oldtown Planning 05.*

As can be seen from the above, the proposed Oldtown Planning 05 development is projected to provide a total of 428 cycle parking spaces to serve the apartment and duplex units. In addition, 4 no. bicycle parking spaces and 8 visitor spaces will also be provided for the Creche.

17. Road Safety

17.1 Accidents

Traffic collision data has been reviewed for the period 2005-2016 from the Road Safety Authority (RSA) traffic collision database. This review will assist to identify any potential safety concerns in relation to the existing road network. These incidents are categorised into class of severity, which includes minor, serious (S), or fatal (F) collisions. The analysis is shown in Figure 27.

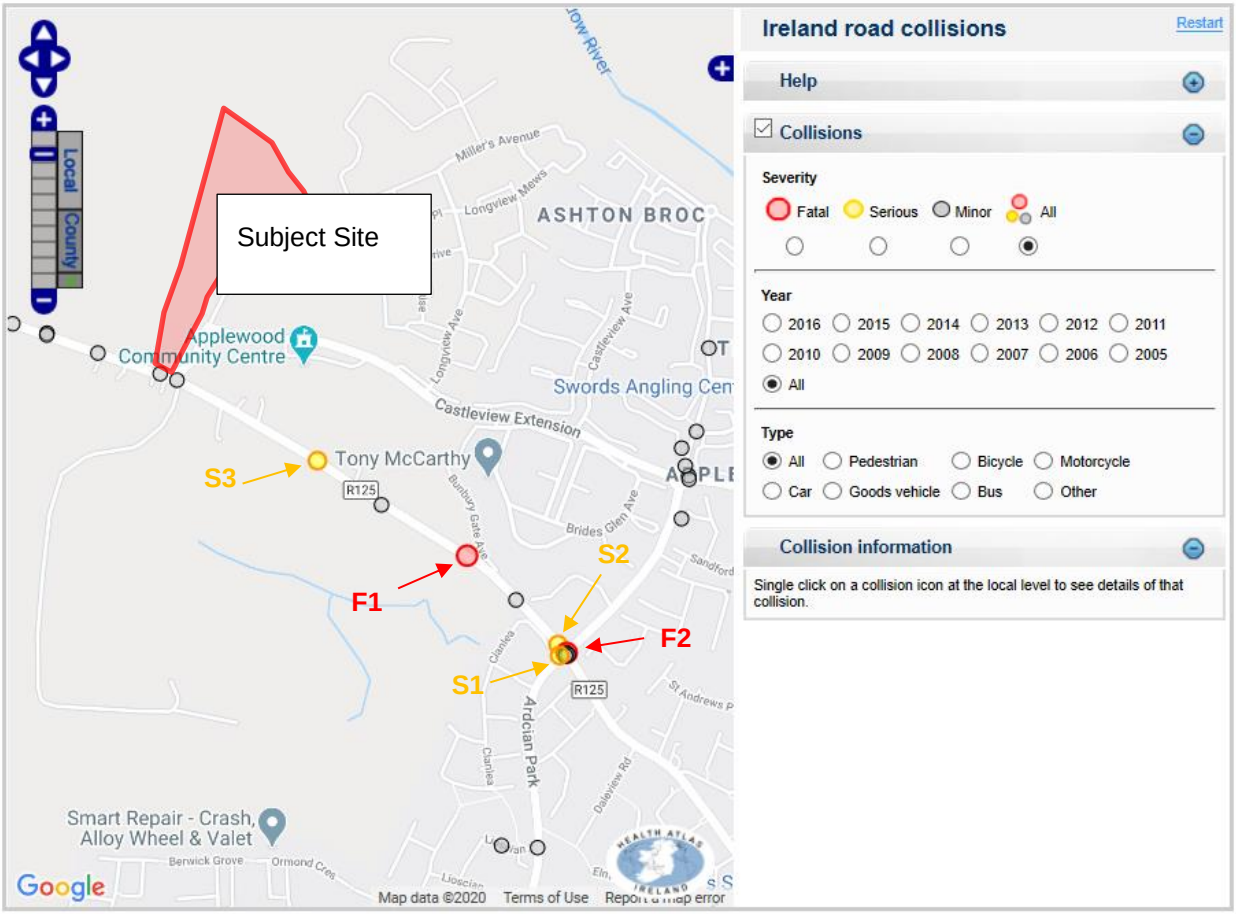


Figure 27 | *RSA Traffic Collision Data 2005 – 2016.*

The analysis showed that some minor, three serious and two fatal incidents occurred on R125 Rathbeale Road in the vicinity of the proposed development site. A summary of these incidents is presented below.

Fatal Incident 1 (F1):	
Year:	2005
Vehicle:	Motorcycle
Circumstances:	Rear end, right turn
Day of week:	Saturday
Time:	16:00 – 19:00
Speed limit:	60 Kph

Fatal Incident 2 (F2):	
Year:	2013
Vehicle:	Goods vehicle
Circumstances:	Other
Day of week:	Wednesday
Time:	23:00 – 03:00
Speed limit:	60 Kph

Serious Incident 1 (S1):

Year:	2005
Vehicle:	Car
Circumstances:	Pedestrian
Day of week:	Friday
Time:	07:00 – 10:00
Speed limit:	50 Kph

Serios Incident 2 (S2):

Year:	2016
Vehicle:	Bicycle
Circumstances:	Other
Day of week:	Monday
Time:	03:00 – 07:00
Speed limit:	50 Kph

Serioius Incident 3 (S3):

Year:	2016
Vehicle:	Car
Circumstances:	Head-on conflict
Day of week:	Tuesday
Time:	07:00 – 10:00
Speed limit:	80 Kph

17.2 Stage 1 Road Safety Audit

A Stage 1 Road Safety Audit has been prepared by Bruton Consulting Engineers on behalf of Waterman Moylan for the strategic housing development proposed as part of the subject pre-planning submission. Details of this audit are contained within the Road Safety Audit Report included in Appendix C of the accompanying Engineering Assessment Report.

18. Conclusion

Waterman Moylan has been appointed by Gerard Gannon Properties to prepare this Traffic and Transport Assessment for a strategic housing development proposed on Oldtown lands, Swords, Co. Dublin.

Vehicular access to the proposed development site will be provided from the Western Distributor Link Road which is substantially developed as part of the previous phases of Oldtown lands.

The subject proposed development is referred to as Oldtown Planning 05. It comprises of 377 residential units and a Creche element and is estimated to be constructed and operational by 2025.

Currently there is adequate public transport, walking and cycling facilities in the area with high frequency bus stops nearby, pedestrian and cycle pathways near the development also.

By the Opening Year of 2025, a total of 1,367 residential units (990 units approved and 377 proposed as part of the subject application) and 1,510 sqm of retail (approved) were assumed to be fully constructed and occupied in Oldtown lands. These developments are estimated to generate a total of 570 vehicle trips in the AM peak hour (182 inbound and 388 outbound) and a total of 594 vehicle trips in the PM peak hour (365 inbound and 229 outbound). The proposed development is the last phase in Oldtown lands, and therefore not further traffic is estimated to be generated by Oldtown.

By the Opening Year of 2025, it is assumed that a total of 521 residential units (approved) and a 1,624-pupil school site (approved and constructed) will be fully constructed, occupied and operational in Mooretown lands. These developments are estimated to generate a total of 787 vehicle trips in the AM peak hour (347 inbound and 440 outbound) and a total of 193 vehicle trips in the PM peak hour (123 inbound and 70 outbound).

In accordance with the Oldtown-Mooretown LAP and the quantum of residential and commercial developments set out within that document, it was assumed that 1,300 new residential units, 7,500 sqm of new retail development and 2,500 sqm of new commercial (non-retail) development - all subject to future planning application and approval, will be fully constructed, occupied and operational in Mooretown lands by the end of the 2030. The trip generation estimated for these additional developments in 2030, when summed with the estimated trips for Mooretown in 2025, equates to a total of 1,621 vehicle trips in the AM peak hour (684 inbound and 937 outbound) and a total of 1,200 vehicle trips in the PM peak hour (688 inbound and 512 outbound).

The above trip generation – considering Oldtown in 2025 and Mooretown in 2030, represents the Oldtown-Mooretown LAP fully developed.

Historic traffic survey carried out for the following junctions have been used:

- **Junction 1**: R125 Rathbeale Road/R108 Naul Road (Priority T-junction);
- **Junction 2**: R125 Rathbeale Road/Western Distributor Link Road (Signalised Crossroads);
- **Junction 3**: R125 Rathbeale Road/Murrough Road (Signalised Crossroads);
- **Junction 4**: Glen Ellan Road (Four-armed Roundabout);

Junction 1 has been modelled based on its current configuration of a priority-controlled T-junction and the results indicate that this junction will operate within capacity for the future assessed year of 2040 with the baseline flows factored up and the inclusion of the overall Oldtown-Mooretown LAP new development trips.

Junction 2 has been modelled based on its recently constructed configuration of a signalised crossroads and the results indicate that this junction will operate with satisfactorily capacity for the future assessed year of 2040 with thebaseline flows factored up and the inclusion of the trips generated by the overall Oldtown-Mooretown LAP new developments.

Junction 3 has been modelled based on its current configuration of a signalised crossroads and the results indicate that this junction is currently operating at capacity and will operate above capacity for the future assessment year of 2025 even without any new development trips included. It is noted that Junction 3 has been part upgraded as part of the LIHAF funded works to the Rathbeale Road via the provision of a new right hand turn lane on the western approach to the existing Murrough Road Junction and it is further noted it has been agreed with Linda Lally of FCC Transportation & Planning Department on 4 March 2022, that further wider infrastructure upgrade works, including that of the Murrough Road Junction 3, do not form part of the remit of the applicant.

Junction 4 has been modelled based on its current configuration of a four-armed roundabout and the results indicate that this junction will operate within capacity for the future assessed year of 2040, with the baseline flows factored up and the inclusion of the trips expected to be generated by the overall Oldtown-Mooretown LAP new developments.

It is recognised by Fingal County Council that R125 Rathbeale Road is one of the critical routes currently serving the Swords Northwest area.

It is understanding that the development of Oldtown and Mooretown lands without any intervention to the transportation infrastructure is likely to increase the current pressures on R125 Rathbeale Road and consequently oversaturate its intersection with Murrough Road (Junction 3).

With the recommendations included as part of the SYSTRA assessment of the Swords North West area it is estimated that the overall traffic increase and impact generated mainly by the Oldtown-Mooretown development will not be of a scale that would indicate a requirement for additional road capacity.

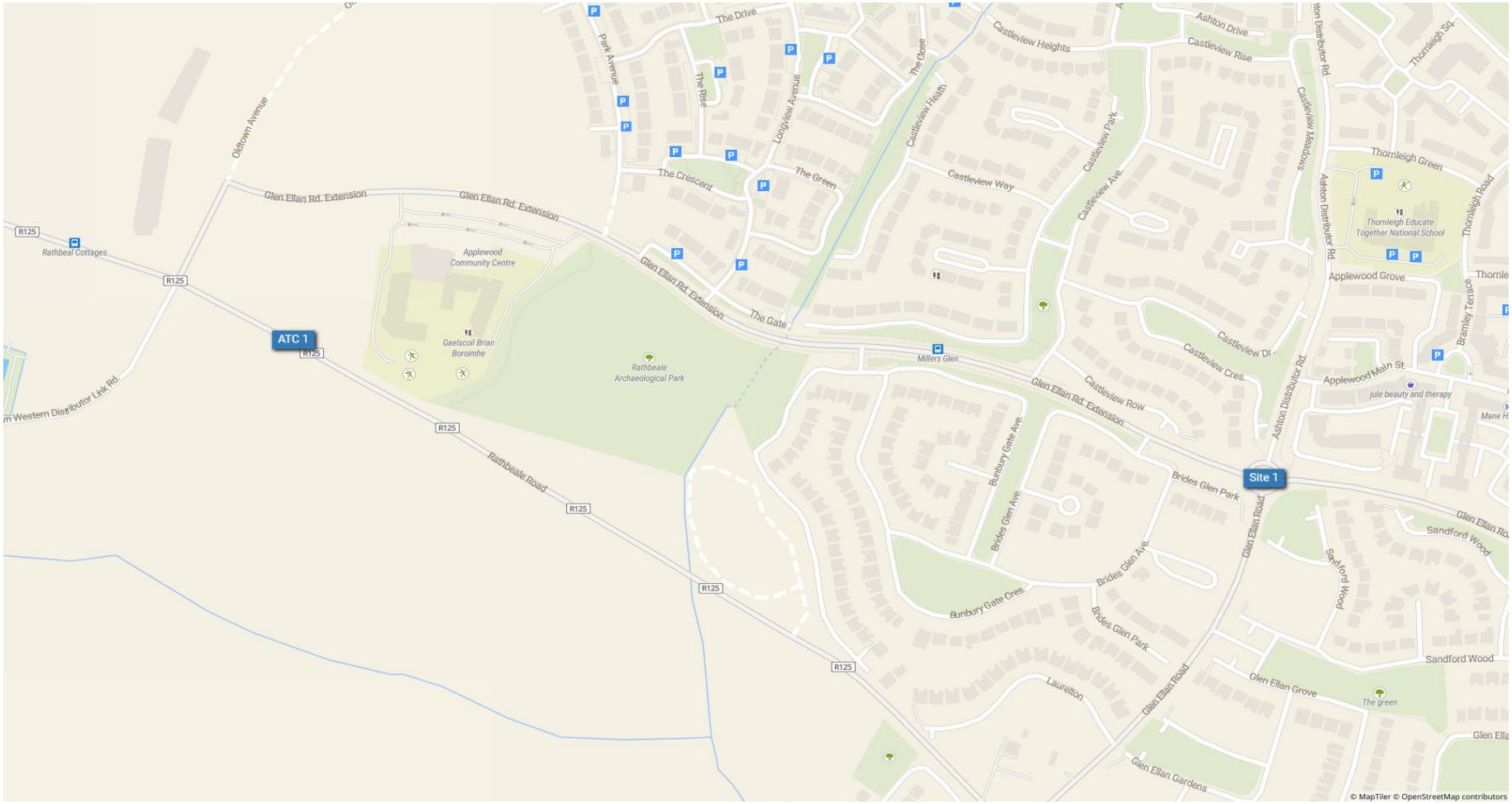
The recommendations include, a new feeder route linking Oldtown-Mooretown with Swords main Street; provision of high standard and prioritised cycle infrastructure along Rathbeale Road and Glen Ellan Road (amongst others); provision of high-quality and cycle priority along key roads on the network and the northern extension of the Swords Western Distributor Road to provide direct access to the MetroLink Park and Ride at Estuary station.

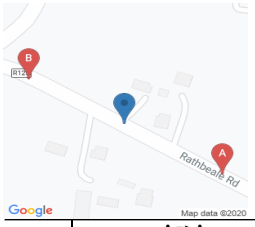
Appendices

A. Traffic Survey

IDASO

Survey Name: HDR 20-032 Swords (Waterman Moylan)
Date: Tue 03 Oct 2017





IDASO

Survey Name: HDR 20-032 Swords (Waterman Moylan)
Site: ATC 1
Location: —
Date: Tue 03-Oct-2017

	A => A							A => B							B => A							B => B						
TIME	CAR	LGV	OGV1	OGV2	SV (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BUS	TOT	PCU
00:00	0	0	0	0	0	0	0	5	0	0	0	0	5	5	5	0	0	0	0	5	5	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	0	0	0	0	4	4	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	12	0	0	0	0	12	12	12	0	0	0	0	12	12	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	0	0	1	0	2	3.3	0	0	0	0	0	0	0
01:45	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
H/TOT	0	0	0	0	0	0	0	6	0	0	0	0	6	6	4	0	0	1	0	5	6.3	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	7	0	0	0	0	7	7	2	0	0	0	0	2	2	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	1	0	0	0	0	1	1	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	5	0	0	2	0	7	9.6	1	1	0	0	0	2	2	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	3.5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	11	0	0	2	0	13	15.6	6	1	1	0	0	8	8.5	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	3	0	1	0	0	4	4.5	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	1	0	4	5.3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	6	0	0	0	0	6	6	8	0	1	1	0	10	11.8	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	6	0	0	2	0	8	10.6	3	0	0	1	0	4	5.3	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	2	0	0	1	0	3	4.3	6	1	1	0	0	8	8.5	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	6	0	0	0	0	6	6	8	3	1	0	0	12	12.5	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	6	0	0	1	0	7	8.3	10	1	1	1	0	13	14.8	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	20	0	0	4	0	24	29.2	27	5	3	2	0	37	41.1	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	8	0	0	0	0	8	8	10	0	0	0	0	10	10	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	6	0	1	0	0	7	7.5	6	0	2	0	0	8	9	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	13	0	0	0	0	13	13	14	0	0	0	0	14	14	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	24	4	0	0	0	28	28	15	8	3	0	0	26	27.5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	51	4	1	0	0	56	56.5	45	8	5	0	0	58	60.5	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	26	8	2	2	0	38	41.6	20	12	5	0	0	37	39.5	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	32	14	3	1	0	50	52.8	35	17	0	12	0	64	79.6	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	63	18	0	1	1	83	85.3	61	9	2	0	2	74	77	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	64	14	1	0	1	80	81.5	84	9	3	2	1	99	104.1	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	185	54	6	4	2	251	261.2	200	47	10	14	3	274	300.2	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	45	4	0	1	0	50	51.3	93	6	1	0	1	101	102.5	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	68	6	2	3	0	79	83.9	98	11	1	0	1	111	112.5	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	98	8	3	2	0	111	115.1	64	11	1	0	1	77	78.5	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	64	4	1	0	0	69	69.5	83	9	2	1	0	95	97.3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	275	22	6	6	0	309	319.8	338	37	5	1	3	384	390.8	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	58	6	1	2	0	67	70.1	77	6	1	1	0	85	86.8	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	42	8	2	0	0	52	53	45	4	3	2	0	54	58.1	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	38	8	1	0	0	47	47.5	43	6	1	0	0	50	50.5	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	23	2	2	0	0	27	28	72	8	3	0	0	83	84.5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	161	24	6	2	0	193	198.6	237	24	8	3	0	272	279.9	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	29	12	0	0	0	41	41	44	9	0	1	0	54	55.3	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	39	5	3	0	0	47	48.5	42	9	2	0	0	53	54	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	32	6	1	0	0	39	39.5	24	6	3	0	0	33	34.5	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	50	7	3	1	0	61	63.8	38	4	0	1	0	43	44.3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	150	30	7	1	0	188	192.8	148	28	5	2	0	183	188.1	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	28	4	4	0	0	36	38	38	6	6	1	0	51	55.3	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	35	6	1	0	0	42	42.5	48	5	2	0	0	55	56	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	47	4	3	0	0	54	55.5	44	8	1	2	0	55	58.1	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	50	3	1	1	0	55	56.8	28	4	4	1	0	37	40.3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	160	17	9	1	0	187	192.8	158	23	13	4	0	198	209.7	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	42	4	0	1	0	47	48.3	40	9	3	1	0	53	55.8	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	36	12	3	1	1	53	56.8	28	8	3	0	0	39	40.5	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	44	5	4	1	0	54	57.3	37	9	1	0	0	47	47.5	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	42	7	3	0	0	52	53.5	37	7	2	1	1	48	51.3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	164	28	10	3	1	206	215.9	142	33	9	2	1	187	195.1	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	40	5	2	1	0	48	50.3	44	6	3	1	0	54	56.8	0	0	0	0	0	0	0
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13:45	0	0	0	0	0	0	0	57	7	1	0	0	65	65.5	48	3	1	1	0	53	54.8	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	203	25	4	3	0	235	240.9	175	26	6	4	0	211	219.2	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	56	6	4	1	0	67	70.3	38	6	1	1	0	46	47.8	0	0	0	0	0	0	0
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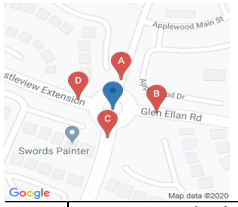
14:45	0	0	0	0	0	0	0	55	4	1	0	1	61	62.5	62	5	1	0	0	68	68.5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	223	27	6	3	1	260	267.9	175	24	5	4	0	208	215.7	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	51	8	2	0	1	62	64	43	5	3	0	2	53	56.5	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	43	4	0	0	0	47	47	51	7	1	0	0	59	59.5	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	50	7	2	1	0	60	62.3	55	8	4	1	0	68	71.3	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	69	6	4	0	0	79	81	39	3	0	0	0	42	42	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	213	25	8	1	1	248	254.3	188	23	8	1	2	222	229.3	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	68	14	4	1	1	88	92.3	46	11	2	0	0	59	60	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	76	13	1	0	1	91	92.5	55	11	1	0	1	68	69.5	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	84	10	2	0	1	97	99	66	17	3	1	1	88	91.8	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	75	14	2	0	0	91	92	54	8	2	0	0	64	65	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	303	51	9	1	3	367	375.8	221	47	8	1	2	279	286.3	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	86	16	2	2	0	106	109.6	51	7	2	0	0	60	61	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	101	16	0	0	1	118	119	73	15	1	0	1	90	91.5	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	109	14	0	1	0	124	125.3	59	7	1	1	0	68	69.8	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	105	14	1	0	0	120	120.5	62	6	0	0	1	69	70	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	401	60	3	3	1	468	474.4	245	35	4	1	2	287	292.3	0	0	0	0	0	0	0

18:00	0	0	0	0	0	0	0	82	8	0	1	0	91	92.3	56	0	1	0	0	57	57.5	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	76	3	3	0	0	82	83.5	44	4	1	0	0	49	49.5	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	65	4	1	1	0	71	72.8	58	2	1	0	0	61	61.5	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	52	3	3	0	0	58	59.5	44	6	0	0	0	50	50	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	275	18	7	2	0	302	308.1	202	12	3	0	0	217	218.5	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	53	2	0	0	0	55	55	36	7	0	0	0	43	43	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	44	2	1	0	1	48	49.5	47	7	0	0	0	54	54	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	36	1	0	0	0	37	37	32	2	0	0	0	34	34	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	47	1	0	0	0	48	48	41	1	1	0	0	43	43.5	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	180	6	1	0	1	188	189.5	156	17	1	0	0	174	174.5	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	54	0	0	0	0	54	54	33	1	0	0	0	34	34	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	31	0	0	0	0	31	31	31	2	1	0	0	34	34.5	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	27	1	0	0	0	28	28	23	3	0	0	0	26	26	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	21	1	1	0	0	23	23.5	16	1	0	0	0	17	17	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	133	2	1	0	0	136	136.5	103	7	1	0	0	111	111.5	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	29	1	0	1	0	31	32.3	18	1	0	0	0	19	19	0	0	0	0	0	0	0
21:15	0	0	0	0	0	0	0	34	0	0	0	0	34	34	20	0	0	0	0	20	20	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	23	0	0	0	0	23	23	19	1	0	0	0	20	20	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	11	2	0	0	0	13	13	16	1	0	2	0	19	21.6	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	97	3	0	1	0	101	102.3	73	3	0	2	0	78	80.6	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	21	2	0	0	0	23	23	12	0	0	1	0	13	14.3	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	11	0	0	1	0	12	13.3	16	0	0	0	0	16	16	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	7	0	0	0	0	7	7	13	0	0	0	0	13	13	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	16	0	0	0	0	16	16	8	0	0	1	0	9	10.3	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	55	2	0	1	0	58	59.3	49	0	0	2	0	51	53.6	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	12	0	0	0	0	12	12	6	0	1	0	0	7	7.5	0	0	0	0	0	0	0
23:15	0	0	0	0	0	0	0	5	0	0	1	0	6	7.3	0	0	0	0	1	1	2	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	7	0	0	0	0	7	7	6	1	0	0	0	7	7	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	6	0	0	0	1	7	8	7	1	0	0	0	8	8	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	30	0	0	1	1	32	34.3	19	2	1	0	1	23	24.5	0	0	0	0	0	0	0
24 TOT	0	0	0	0	0	0	0	3321	398	84	39	11	3853	3956.7	2933	402	97	45	14	3491	3612	0	0	0	0	0	0	0



IDASO

Survey Name: HDR 20-032 Swords (Waterman Moylan)
Site: Site 1
Location: —
Date: Tue 21-May-2019

	A => A									A => B									A => C									A => D									B => A								
TIME	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	7	5	1	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	0	0	13	1	0	0	0	1	0	15	14.2	13	0	0	0	0	0	0	13	13	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	16	16	16	3	0	0	0	0	0	19	19	1	0	0	0	0	0	0	0	1	1	5	0	0	0	0	0	5	5
07:45	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	14	14	8	3	0	0	0	0	0	11	11	3	1	0	0	0	1	0	5	4.2	10	0	0	0	0	0	0	10	10
H/TOT	0	0	0	0	0	0	0	0	0	50	1	0	0	0	1	0	52	51.2	42	7	0	0	0	0	0	49	49	5	1	0	0	0	1	0	7	6.2	16	0	0	0	0	0	0	16	16
08:00	0	0	0	0	0	0	0	0	0	23	1	0	0	0	0	0	24	24	25	1	0	0	0	0	0	26	26	7	0	0	0	0	0	0	7	7	27	1	0	0	0	0	0	28	28
08:15	0	0	0	0	0	0	0	0	0	22	2	0	0	0	1	0	25	24.2	38	0	0	0	0	1	0	39	38.2	12	0	0	0	0	0	0	12	12	12	0	0	0	0	0	0	12	12
08:30	0	0	0	0	0	0	0	0	0	11	0	0	0	0	6	0	17	12.2	21	0	0	0	0	2	0	23	21.4	7	0	0	0	0	4	0	11	7.8	9	0	0	0	0	0	9	9
08:45	0	0	0	0	0	0	0	0	0	18	0	0	0	0	1	0	19	18.2	26	1	0	0	0	0	0	27	27	1	0	0	0	0	0	0	1	1	6	1	0	0	0	0	0	7	7
H/TOT	0	0	0	0	0	0	0	0	0	74	3	0	0	0	8	0	85	78.6	110	2	0	0	0	3	0	115	112.6	27	0	0	0	0	4	0	31	27.8	54	2	0	0	0	0	56	56
09:00	0	0	0	0	0	0	0	0	0	5	0	0	0	0	1	0	6	5.2	9	0	0	0	0	2	0	11	9.4	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	5
09:15	0	0	0	0	0	0	0	0	0	11	0	0	0	0	1	0	12	11.2	10	2	0	0	0	0	0	12	12	6	0	0	0	0	0	0	6	6	6	0	0	0	0	0	0	6	6
09:30	0	0	0	0	0	0	0	0	0	12	1	0	1	0	0	0	14	14.5	12	1	0	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	5
09:45	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	6	15	3	0	0	0	0	0	18	18	1	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	32	3	0	1	0	2	0	38	36.9	46	6	0	0	0	2	0	54	52.4	7	0	0	0	0	0	0	7	7	16	3	0	0	0	0	0	19	19
10:00	0	0	0	0	0	0	0	0	0	6	1	0	1	0	0	0	8	8.5	10	2	0	0	0	0	0	12	12	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2	2
10:15	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6	6	11	4	0	0	0	0	0	15	15	3	0	0	0	0	0	0	3	3	4	0	0	0	0	0	0	4	4
10:30	0	0	0	0	0	0	0	0	0	6	1	1	0	0	0	0	8	7.4	12	2	0	0	0	0	0	14	14	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	2
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H/TOT	0	0	0	0	0	0	0	0	0	24	2	1	1	0	0	0	28	27.9	47	9	0	0	0	0	0	56	56	4	0	0	0	0	0	0	4	4	10	0	0	0	0	0	0	10	10
11:00	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	7	1	0	0	0	0	0	8	8	5	0	0	0	0	0	0	5	5	4	0	0	0	0	0	0	4	4
11:15	0	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0	9	9	7	1	0	0	0	1	0	9	8.2	2	0	0	0	0	0	0	2	2	7	1	0	0	0	0	0	8	8
11:30	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	9	8	2	0	0	0	0	0	10	10	5	0	0	0	0	0	0	5	5	4	0	0	0	0	1	0	5	4.2
11:45	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	13	2	0	0	0	0	0	15	15	1	0	0	0	0	0	0	1	1	4	1	0	0	0	0	0	5	5
H/TOT	0	0	0	0	0	0	0	0	0	22	2	0	0	0	0	0	24	24	35	6	0	0	0	1	0	42	41.2	13	0	0	0	0	0	0	13	13	19	2	0	0	0	1	0	22	21.2
12:00	1	0	0	0	0	0	0	1	1	6	1	0	1	0	0	0	8	8.5	8	0	0	1	0	1	0	10	9.7	7	0	0	0	0	0	0	7	7	6	2	0	1	0	0	0	9	9.5
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12:45	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	8	19	0	0	0	0	0	0	19	19	5	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	5	5
H/TOT	1	0	0	0	0	0	0	1	1	30	4	1	1	0	0	0	36	35.9	53	3	1	1	0	1	0	59	58.1	24	0	0	0	0	0	0	24	24	21	3	0	1	0	0	0	25	25.5
13:00	0	0	0	0	0	0	0	0	0	15	1	0	0	0	0	0	16	16	20	2	0	0	0	0	0	22	22	11	0	0	0	0	0	0	11	11	3	0	0	0	0	0	0	3	3
13:15	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	1	9	10	14	5	0	0	0	0	0	19	19	7	1	0	0	0	0	0	8	8	7	1	0	0	0	0	0	8	8
13:30	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6	6	25	4	0	0	0	0	0	29	29	6	0	0	0	0	0	0	6	6	4	1	0	0	0	0	0	5	5
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H/TOT	0	0	0	0	0	0	0	0	0	34	1	0	0	0	0	1	36	37	67	15	0	0	0	0	0	82	82	28	1	0	0	0	0	0	29	29	28	4	0	0	0	0	0	32	32
14:00	0	0	0	0	0	0	0	0	0	17	1	0	0	0	0	0	18	18	22	3	0	0	0	0	0	25	25	11	0	0	0	0	0	0	11	11	14	4	0	1	0	0	0	19	19.5
14:15	0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	11	11	16	3	0	1	0	0	0	20	20.5	8	2	0	0	0	0	0	10	10	7	0	0	0	0	0	0	7	7
14:30	0	0	0	0	0	0	0	0	0	10	3	0	0	0	0	0	13	13	18	2	0	0	0	0	0	20	20	3	0	0	0	0	0	0	3	3	6	0	0	0	0	0	0	6	6
14:45	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	13	13	8	0	0	0	0	0	0	8	8	0	1	0	0	0	0	0	1	1	11	0	0	0	0	0	0	11	11
H/TOT	0	0	0	0	0	0	0	0	0	50	5	0	0	0	0	0	55	55	64	8	0	1	0	0	0	73	73.5	22	3	0	0	0	0	0	25	25	38	4	0	1	0	0	0	43	43.5
15:00	0	0	0	0	0	0	0	0	0	20	1	0	0	0	3	0	24	21.6	17	0	0	0	0	0	0	17	17	11	0	0	0	0	0	0	11	11	7	0	0	0	0	0	0	7	7
15:15	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6	6	13	1	1	1	0	0	0	16	15.9	7	0	0	0	0	1	0	8	7.2	12	0	0	0	0	0	0	12	12
15:30	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	19	19	13	1	0	0	0	0	0	14	14	0	0	0	0	0	0	0	0	0	8	0	1	1	0	0	0	10	9.9
15:45	0	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	10	10	13	4	0	0	0	0	0	17	17	10	2	0	0	0	0	0	12	12	15	0	0	0	0	0	0	15	15
H/TOT	0	0	0	0	0	0	0	0	0	54	2	0	0	0	3	0	59	56.6	56	6	1	1	0	0	0	64	63.9	28	2	0	0	0	1	0	31	30.2	42	0	1	1	0	0	0	44	43.9
16:00	0	0	0	0	0	0	0	0	0	10	0	0	0	0	2	0	12	10.4	19	2	0	0	0	0	0	21	21	4	0	0	0	0	0	0	4	4	8	1	0	0	0	0	0	9	9
16:15	0	0	0	0	0	0	0	0	0	7	1	0	0	0	1	0	9	8.2	14	1	0	0	0	0	0	15	15	11	1	0	0	0	0	0	12	12	16	0	0	0	0	0	0	16	16
16:30	1	0	0	0	0	0	0	1	1	13	0	0	0	0	0	0	13	13	17	2	0	0	0	1	0	20	19.2	7	1	0	0	0	0	0	8	8	9	2	0	0	0	0	0	11	11
16:45	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	9	16	1	1	1	0	0	0	19	18.9	9	0	0	0	0	0	0	9	9	6	1	0	0	0	0	0	7	7
H/TOT	1	0	0	0	0	0	0	1	1	39	1	0	0	0	3	0	43	40.6	66	6	1	1	0	1	0	75	74.1	31	2	0	0	0	0	0	33	33	39	4	0	0	0	0	0	43	43
17:00	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	7	16	0	0	0	0	0	0	16	16	4	0	0	0	0	0	0	4	4	12	2	0	0	0	1	0	15	14.2
17:15	1	0	0	0	0	0	0	1	1	7	0	0	0	0	0	0	7	7	10	2	0	0	0	0	0	12	12	8	1	0	0	0	0	0	9	9	17	1	0	0	0	0	0	18	18
17:30	0	0	0	0	0	0	0	0	0	12	0	0	0	0	4	0	16	12.8	13	5	0	1	0	0	0	19	19.5	11	0	0	0	0	0	0	11	11	6	2	0	0	0	0	0	8	8
17:45	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	9	20	1	0	0	0	0	0	21	21	5	1	0	0	0	1	0	7	6.2	16	0	0	0	0	0	0	16	16
H/TOT	1	0	0	0	0	0	0	1	1	35	0	0	0	0	4	0	39	35.8	59	8	0	1	0	0	0	68	68.5	28	2	0	0	0	1	0	31	30.2	51	5	0	0	0	1	0	57	56.2
18:00	0	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0	9	9	17	2	0	0	0	1	0	20	19.2	15	0	0	0	0	0	0	15	15	16	4	0	0	0	0	0	20	20
18:15	0	0	0	0	0	0	0	0	0	15	0	1	0	0	0	0	16	15.4	17	3	0	0	0	0	0	20	20	5	2	0	0	0	0	0	7	7	22	0	0	0	0	0	1	23	24
18:30	2	0	0	0	0	0	0	2	2	13	0	0	0	0	0	0	13	13	17	0	0	0	0	0	0	17	17	11	0	0	0	0	0	0	11	11	14	1	1	0	0	0	0	16	15.4
18:45	1	0	0	0	0	0	0	1	1	7	0	0	0	0	0	0	7	7	18	2	0	0	0	0	0	20	20	9	0	0	0	0	0	0	9	9	17	0	0	0	0	0	0	17	17
H/TOT	3	0	0	0	0	0	0	3	3	42	2	1	0	0	0	0	45	44.4	69	7	0	0	0	1	0	77	76.2	40	2	0	0	0	0	0	42	42	69	5	1	0	0	0	1	76	76.4
12 TOT	6	0	0	0	0	0	0	6	6	486	26	3	3	0	21	1	540	523.9	714	83	3	5	0	9	0	814	807.5	257	13	0	0	0	7	0	277	271.4	403	32	2	3	0	2	1	443	442.7

B => B									B => C								B => D								C => A								C => B							
CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU
0	0	0	0	0	0	0	0	0	22	7	0	0	0	0	2	31	33	6	1	0	0	0	0	0	7	7	5	1	0	0	0	0	0	6	6	30	4	0	0	0	1	3	38	40.2
0	0	0	0	0	0	0	0	0	20	7	0	1	0	0	0	28	28.5	7	3	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	27	8	0	1	1	0	3	40	44.8
0	0	0	0	0	0	0	0	0	22	6	0	0	2	0	0	30	32.6	12	0	0	0	0	0	0	12	12	5	2	1	0	0	0	0	8	7.4	40	6	2	1	0	1	5	55	58.5
0	0	0	0	0	0	0	0	0	21	4	0	0	2	0	3	30	35.6	18	1	0	0	0	0	0	19	19	8	0	0	0	0	0	0	8	8	59	5	0	0	0	1	5	70	74.2
0	0	0	0	0	0	0	0	0	85	24	0	1	4	0	5	119	129.7	43	5	0	0	0	0	0	48	48	18	3	1	0	0	0	0	22	21.4	156	23	2	2	1	3	16	203	217.7
0	0	0	0	0	0	0	0	0	30	5	0	2	0	0	0	37	38	47	0	0	0	0	0	0	47	47	26	0	0	0	0	0	0	26	26	45	7	0	1	1	0	4	58	63.8
0	0	0	0	0	0	0	0	0	16	3	0	0	3	0	2	24	29.9	53	3	0	0	1	0	0	57	58.3	18	0	0	0	0	2	0	20	18.4	42	4	0	1	0	2	1	50	49.9
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C => C									C => D								D => A								D => B								D => C							
CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU	CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU
0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	1	6	7.5	0	0	0	1	0	0	0	1	1.5	41	2	0	0	0	1	0	44	43.2	18	1	0	0	0	0	0	19	19
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0	0	0	0	0	0	0	0	0	24	1	0	1	0	0	0	26	26.5	1	0	0	0	0	0	0	1	1	25	2	0	0	0	0	0	27	27	6	0	0	4	0	0	0	10	12
0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	22	22	7	3	0	0	0	0	0	10	10	13	1	1	0	0	0	0	15	14.4	13	1	0	0	0	0	0	14	14
1	0	0	0	0	0	0	1	1	77	3	0	1	0	1	0	82	81.7	13	3	0	0	0	0	0	16	16	79	6	1	2	0	0	0	88	88.4	40	3	0	4	0	0	0	47	49
0	0	0	0	0	0	0	0	0	30	3	0	0	0	0	0	33	33	3	1	0	0	0	0	0	4	4	18	1	1	0	0	0	0	20	19.4	13	1	0	1	0	1	0	16	15.7
0	0	0	0	0	0	0	0	0	47	0	0	0	0	0	0	47	47	6	0	0	0	0	0	0	6	6	36	0	0	0	0	1	0	37	36.2	55	1	0	0	0	0	0	56	56
0	0	0	0	0	0	0	0	0	23	0	0	1	0	0	0	24	24.5	7	0	0	0	0	0	0	7	7	45	1	0	1	0	0	0	47	47.5	44	0	0	0	0	0	0	44	44
0	0	0	0	0	0	0	0	0	56	2	0	1	0	0	0	59	59.5	8	0	0	0	0	0	0	8	8	39	2	0	2	0	0	0	43	44	19	2	0	0	0	0	0	21	21
0	0	0	0	0	0	0	0	0	156	5	0	2	0	0	0	163	164	24	1	0	0	0	0	0	25	25	138	4	1	3	0	1	0	147	147.1	131	4	0	1	0	1	0	137	136.7
0	0	0	1	0	0	0	1	1.5	39	2	0	0	0	1	0	42	41.2	3	1	0	0	0	4	0	8	4.8	23	2	0	0	0	0	0	25	25	17	1	1	0	0	0	0	19	18.4
1	0	0	0	0	0	0	1	1	44	2	0	0	0	0	1	47	48	8	1	0	0	0	0	0	9	9	58	1	0	0	0	0	0	59	59	57	0	0	0	0	0	0	57	57
1	0	0	0	0	0	1	2	3	18	3	0	0	0	0	0	21	21	6	0	0	0	0	0	0	6	6	59	1	0	0	0	0	0	60	60	67	3	0	0	0	0	2	72	74
1	0	0	0	0	0	0	1	1	62	1	0	1	0	0	0	64	64.5	1	1	0	0	0	0	0	2	2	24	1	0	0	0	0	0	25	25	27	2	1	0	0	0	0	30	29.4
3	0	0	1	0	0	1	5	6.5	163	8	0	1	0	1	1	174	174.7	18	3	0	0	0	4	0	25	21.8	164	5	0	0	0	0	0	169	169	168	6	2	0	0	0	2	178	178.8
0	0	0	0	0	0	0	0	0	24	1	0	0	0	0	0	25	25	4	0	0	0	0	0	0	4	4	30	1	0	1	0	0	0	32	32.5	18	3	1	0	0	0	0	22	21.4
0	0	0	0	0	0	0	0	0	46	2	0	0	0	1	0	49	48.2	3	0	0	0	0	0	0	3	3	27	4	0	0	0	0	0	31	31	20	1	0	0	0	0	0	21	21
0	0	0	0	0	0	0	0	0	19	2	0	0	0	0	0	21	21	6	0	0	0	0	0	0	6	6	51	3	0	0	0	0	0	54	54	34	0	0	1	0	0	0	35	35.5
0	0	0	0	0	0	0	0	0	34	0	0	0	0	1	0	35	34.2	0	1	0	0	0	0	0	1	1	31	2	0	0	0	0	0	33	33	6	0	0	0	0	0	0	6	6
0	0	0	0	0	0	0	0	0	123	5	0	0	0	2	0	130	128.4	13	1	0	0	0	0	0	14	14	139	10	0	1	0	0	0	150	150.5	78	4	1	1	0	0	0	84	83.9
0	0	0	0	0	0	0	0	0	33	2	0	0	0	0	0	35	35	5	0	0	0	0	0	0	5	5	34	3	0	0	0	0	0	37	37	20	1	0	0	0	0	0	21	21
0	0	0	0	0	0	0	0	0	39	4	0	0	0	1	0	44	43.2	1	0	0	0	0	0	0	1	1	55	0	0	0	0	0	0	55	55	18	1	1	1	0	0	0	21	20.9
1	0	0	0	0	0	0	1	1	24	0	0	0	0	0	0	24	24	9	0	0	0	0	0	0	9	9	33	0	0	0	0	0	0	33	33	30	4	0	0	0	0	0	34	34
0	0	0	0	0	0	0	0	0	38	4	1	1	0	1	0	45	44.1	7	0	0	0	0	0	0	7	7	42	3	0	0	0	0	0	45	45	18	2	0	0	0	0	0	20	20
1	0	0	0	0	0	0	1	1	134	10	1	1	0	2	0	148	146.3	22	0	0	0	0	0	0	22	22	164	6	0	0	0	0	0	170	170	86	8	1	1	0	0	0	96	95.9
0	0	0	0	0	0	0	0	0	40	2	0	1	0	2	0	45	43.9	5	0	0	0	0	0	0	5	5	37	1	0	0	0	0	0	38	38	28	1	1	0	1	0	0	31	31.7
0	0	0	0	0	0	0	0	0	44	3	0	0	0	0	0	47	47	8	0	0	0	0	0	0	8	8	38	1	0	0	0	0	0	39	39	27	0	0	0	0	0	0	27	27
0	0	0	0	0	0	0	0	0	39	1	0	1	0	0	0	41	41.5	7	1	0	0	0	0	0	8	8	35	2	0	0	0	0	0	37	37	19	1	0	0	0	0	0	20	20
0	0	0	0	0	0	0	0	0	51	5	2	0	0	0	0	58	56.8	3	1	0	0	0	0	0	4	4	34	0	1	0	0	0	0	35	34.4	17	0	0	1	0	0	0	18	18.5
0	0	0	0	0	0	0	0	0	174	11	2	2	0	2	0	191	189.2	23	2	0	0	0	0	0	25	25	144	4	1	0	0	0	0	149	148.4	91	2	1	1	1	0	0	96	97.2
1	0	0	0	0	0	0	1	1	48	1	1	0	0	0	0	50	49.4	6	0	0	0	0	0	0	6	6	36	2	0	0	0	0	0	38	38	32	2	0	0	0	0	0	34	34
0	0	0	0	0	0	0	0	0	43	5	0	0	0	0	0	48	48	8	0	0	0	0	1	0	9	8.2	41	1	0	0	0	0	0	42	42	26	1	0	0	0	0	0	27	27
0	0	0	0	0	0	0	0	0	42	4	1	1	0	1	0	49	48.1	9	0	0	0	0	0	0	9	9	47	3	0	0	0	0	0	50	50	28	1	0	0	0	0	0	29	29
0	0	0	0	0	0	0	0	0	45	1	0	0	0	0	0	46	46	4	0	0	0	0	0	0	4	4	49	2	0	0	0	0	0	51	51	19	2	0	0	0	0	0	21	21
1	0	0	0	0	0	0	1	1	178	11	2	1	0	1	0	193	191.5	27	0	0	0	0	1	0	28	27.2	173	8	0	0	0	0	0	181	181	105	6	0	0	0	0	0	111	111
8	0	0	2	0	0	2	12	15	1431	76	7	15	0	17	5	1551	1545.7	229	11	0	2	0	5	0	247	244	1924	89	11	9	1	10	3	2047	2041.2	1275	59	7	14	1	4	3	1363	1366.9

D => D								
CAR	LGV	M/C	OGV1	OGV2	P/C	SV (BUS	TOT	PCU
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	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	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	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	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
1	0	0	0	0	0	0	1	1
1	0	0	0	0	0	0	1	1
1	0	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	0	0	0
1	0	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	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	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	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
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	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	0	0	0
1	0	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	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	0	3	3

B. TRICS – Trip Rates

Calculation Reference: AUDIT-561501-210330-0317

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

12	CONNAUGHT		
	CS	SLIGO	1 days
13	MUNSTER		
	CR	CORK	2 days
15	GREATER DUBLIN		
	DL	DUBLIN	3 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: 47 to 322 (units:)
Range Selected by User: 47 to 538 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 27/05/19

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

Selected survey days:

Monday	1 days
Tuesday	2 days
Wednesday	1 days
Friday	2 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:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Industrial Zone	1
Residential Zone	4
Village	1

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

Secondary Filtering selection:

Use Class:

C3	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:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days
25,001 to 50,000	2 days
50,001 to 100,000	1 days

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

Population within 5 miles:

25,001 to 50,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
500,001 or More	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	5 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	6 days

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

PTAL Rating:

No PTAL Present	6 days

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

LIST OF SITES relevant to selection parameters

1 CR-03-K-02 SEMI-DET. & FLATS CORK
SKEHARD ROAD
CORK
BALLINURE
Edge of Town
Residential Zone
Total No of Dwellings: 116
Survey date: FRIDAY *20/06/14* *Survey Type: MANUAL*

2 CR-03-K-03 TERRACED & FLATS CORK
SKEHARD ROAD
CORK
LAHARN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 47
Survey date: FRIDAY *23/03/18* *Survey Type: MANUAL*

3 CS-03-K-01 FLATS & MIXED HOUSES SLIGO
STATION ROAD
BALLISODARE

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 322
Survey date: MONDAY *27/05/19* *Survey Type: MANUAL*

4 DL-03-K-02 HOUSES & FLATS DUBLIN
MILLTOWN ROAD
DUBLIN
MILLTOWN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 68
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

5 DL-03-K-03 HOUSES & FLATS DUBLIN
CHARLESTOWN
DUBLIN

Edge of Town
Industrial Zone
Total No of Dwellings: 322
Survey date: WEDNESDAY *11/09/13* *Survey Type: MANUAL*

6 DL-03-K-04 FLATS AND DUPLEXES DUBLIN
ALL HALLOWS SQUARE
DUBLIN
DRUMCONDRA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 76
Survey date: TUESDAY *22/11/16* *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/K - MIXED PRIV HOUS (FLATS AND HOUSES)
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	159	0.046	6	159	0.184	6	159	0.230
08:00 - 09:00	6	159	0.107	6	159	0.284	6	159	0.391
09:00 - 10:00	6	159	0.109	6	159	0.138	6	159	0.247
10:00 - 11:00	6	159	0.077	6	159	0.100	6	159	0.177
11:00 - 12:00	6	159	0.085	6	159	0.102	6	159	0.187
12:00 - 13:00	6	159	0.100	6	159	0.108	6	159	0.208
13:00 - 14:00	6	159	0.212	6	159	0.172	6	159	0.384
14:00 - 15:00	6	159	0.161	6	159	0.147	6	159	0.308
15:00 - 16:00	6	159	0.149	6	159	0.111	6	159	0.260
16:00 - 17:00	6	159	0.174	6	159	0.124	6	159	0.298
17:00 - 18:00	6	159	0.237	6	159	0.136	6	159	0.373
18:00 - 19:00	6	159	0.213	6	159	0.131	6	159	0.344
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.670			1.737			3.407

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:	47 - 322 (units:)
Survey date date range:	01/01/12 - 27/05/19
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-561501-210331-0304

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : I - SHOPPING CENTRE - LOCAL SHOPS
TOTAL VEHICLES

Selected regions and areas:

14	LEINSTER		
	WX	WEXFORD	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	1 days
16	ULSTER (REPUBLIC OF IRELAND)		
	DN	DONEGAL	2 days

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

Primary Filtering selection:

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

Parameter:	Gross floor area
Actual Range:	856 to 3394 (units: sqm)
Range Selected by User:	504 to 4650 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 23/03/18

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

Selected survey days:

Wednesday	1 days
Friday	1 days
Saturday	1 days
Sunday	1 days

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

Selected survey types:

Manual count	4 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:

Town Centre	1
Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	2

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

Selected Location Sub Categories:

Residential Zone	1
No Sub Category	3

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

Secondary Filtering selection:

Use Class:

n/a	4 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:

10,001 to 15,000	1 days
15,001 to 20,000	3 days

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

Population within 5 miles:

25,001 to 50,000	3 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	3 days

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

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	4 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

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	4 days

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

LIST OF SITES relevant to selection parameters

1	DL-01-I-07 DUNDRUM ROAD DUBLIN WINDY ARBOUR	LOCAL SHOPS		DUBLIN
	Suburban Area (PPS6 Out of Centre) No Sub Category Total Gross floor area:		1034 sqm	
	Survey date: WEDNESDAY		*01/10/14*	*Survey Type: MANUAL*
2	DN-01-I-01 PEARSE ROAD LETTERKENNY	LOCAL SHOPS		DONEGAL
	Edge of Town Centre No Sub Category Total Gross floor area:		856 sqm	
	Survey date: SATURDAY		*27/09/14*	*Survey Type: MANUAL*
3	DN-01-I-02 PEARSE ROAD LETTERKENNY	LOCAL SHOPS		DONEGAL
	Town Centre No Sub Category Total Gross floor area:		3394 sqm	
	Survey date: FRIDAY		*26/09/14*	*Survey Type: MANUAL*
4	WX-01-I-01 ST AIDAN'S ROAD WEXFORD	LOCAL SHOPS		WEXFORD
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area:		3060 sqm	
	Survey date: SUNDAY		*28/09/14*	*Survey Type: MANUAL*

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
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	1761	0.227	3	1761	0.246	3	1761	0.473
08:00 - 09:00	4	2086	0.551	4	2086	0.336	4	2086	0.887
09:00 - 10:00	4	2086	2.373	4	2086	1.594	4	2086	3.967
10:00 - 11:00	4	2086	2.565	4	2086	2.121	4	2086	4.686
11:00 - 12:00	4	2086	2.876	4	2086	2.505	4	2086	5.381
12:00 - 13:00	4	2086	2.972	4	2086	3.176	4	2086	6.148
13:00 - 14:00	4	2086	2.912	4	2086	2.948	4	2086	5.860
14:00 - 15:00	4	2086	2.984	4	2086	3.032	4	2086	6.016
15:00 - 16:00	4	2086	2.481	4	2086	2.709	4	2086	5.190
16:00 - 17:00	4	2086	2.888	4	2086	2.792	4	2086	5.680
17:00 - 18:00	4	2086	2.637	4	2086	2.912	4	2086	5.549
18:00 - 19:00	4	2086	1.342	4	2086	1.942	4	2086	3.284
19:00 - 20:00	2	2047	2.174	2	2047	2.467	2	2047	4.641
20:00 - 21:00	2	2047	1.466	2	2047	2.125	2	2047	3.591
21:00 - 22:00	2	2047	0.635	2	2047	0.684	2	2047	1.319
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			31.083			31.589			62.672

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:	856 - 3394 (units: sqm)
Survey date date range:	01/01/13 - 23/03/18
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	1
Number of Sundays:	1
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-561501-210407-0446

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : O - LEISURE PARK
TOTAL VEHICLES

Selected regions and areas:
08 NORTH WEST
LC LANCASHIRE 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: 7950 to 7950 (units: sqm)
Range Selected by User: 4050 to 30000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 22/06/19

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

Selected survey days:
Saturday 1 days

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

Selected survey types:
Manual count 1 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:
Town Centre 1

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

Selected Location Sub Categories:
Built-Up Zone 1

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

Secondary Filtering selection:

Use Class:
n/a 1 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:
25,001 to 50,000 1 days

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

Population within 5 miles:
125,001 to 250,000 1 days

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

Car ownership within 5 miles:
0.6 to 1.0 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 1 days

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

PTAL Rating:
No PTAL Present 1 days

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

LIST OF SITES relevant to selection parameters

1 LC-07-O-04 LEISURE PARK LANCASHIRE
MAYSON STREET
BLACKBURN

Town Centre
Built-Up Zone
Total Gross floor area: 7950 sqm
Survey date: SATURDAY *22/06/19* *Survey Type: MANUAL*

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

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
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									
08:00 - 09:00	1	7950	0.428	1	7950	0.214	1	7950	0.642
09:00 - 10:00	1	7950	0.780	1	7950	0.314	1	7950	1.094
10:00 - 11:00	1	7950	0.906	1	7950	0.541	1	7950	1.447
11:00 - 12:00	1	7950	1.258	1	7950	0.931	1	7950	2.189
12:00 - 13:00	1	7950	1.723	1	7950	1.182	1	7950	2.905
13:00 - 14:00	1	7950	1.648	1	7950	1.321	1	7950	2.969
14:00 - 15:00	1	7950	1.535	1	7950	1.786	1	7950	3.321
15:00 - 16:00	1	7950	1.811	1	7950	1.572	1	7950	3.383
16:00 - 17:00	1	7950	1.736	1	7950	1.472	1	7950	3.208
17:00 - 18:00	1	7950	1.522	1	7950	1.786	1	7950	3.308
18:00 - 19:00	1	7950	2.352	1	7950	1.874	1	7950	4.226
19:00 - 20:00	1	7950	1.522	1	7950	1.597	1	7950	3.119
20:00 - 21:00	1	7950	1.233	1	7950	1.635	1	7950	2.868
21:00 - 22:00	1	7950	0.767	1	7950	1.421	1	7950	2.188
22:00 - 23:00	1	7950	0.805	1	7950	1.447	1	7950	2.252
23:00 - 24:00	1	7950	0.327	1	7950	0.503	1	7950	0.830
Total Rates:			20.353			19.596			39.949

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:	7950 - 7950 (units: sqm)
Survey date date range:	01/01/13 - 22/06/19
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	1
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.

C. Junction Modelling

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Junction 1 - AM-PM.j9
Path: M:\Projects\17\17-144\Design\Traffic\Junction Modelling\MODELLING MAY 2021\Junction 1
Report generation date: 01/04/2022 13:31:58

Summary of junction performance

	AM		PM	
	Queue (Veh)	RFC	Queue (Veh)	RFC
	Junction 1 - 2022			
Stream B-C	0.2	0.16	1.2	0.54
Stream B-A	0.1	0.06	0.2	0.14
Stream C-AB	1.9	0.54	0.9	0.37
	Junction 1 - 2025			
Stream B-C	0.2	0.17	1.3	0.57
Stream B-A	0.1	0.06	0.2	0.16
Stream C-AB	2.2	0.58	1.0	0.40
	Junction 1 - 2025 + LAP Developments			
Stream B-C	0.2	0.18	1.4	0.59
Stream B-A	0.1	0.10	0.3	0.21
Stream C-AB	3.2	0.65	1.3	0.42
	Junction 1 - 2030			
Stream B-C	0.2	0.19	1.7	0.64
Stream B-A	0.1	0.07	0.2	0.20
Stream C-AB	3.2	0.66	1.3	0.44
	Junction 1 - 2030 + Overall LAP			
Stream B-C	0.3	0.20	2.3	0.70
Stream B-A	0.1	0.12	0.6	0.36
Stream C-AB	4.9	0.74	2.1	0.53
	Junction 1 - 2040			
Stream B-C	0.2	0.20	2.0	0.67
Stream B-A	0.1	0.07	0.3	0.22
Stream C-AB	3.6	0.69	1.4	0.47
	Junction 1 - 2040 + Overall LAP			
Stream B-C	0.3	0.21	2.8	0.74
Stream B-A	0.1	0.13	0.7	0.41
Stream C-AB	6.2	0.78	2.4	0.56

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

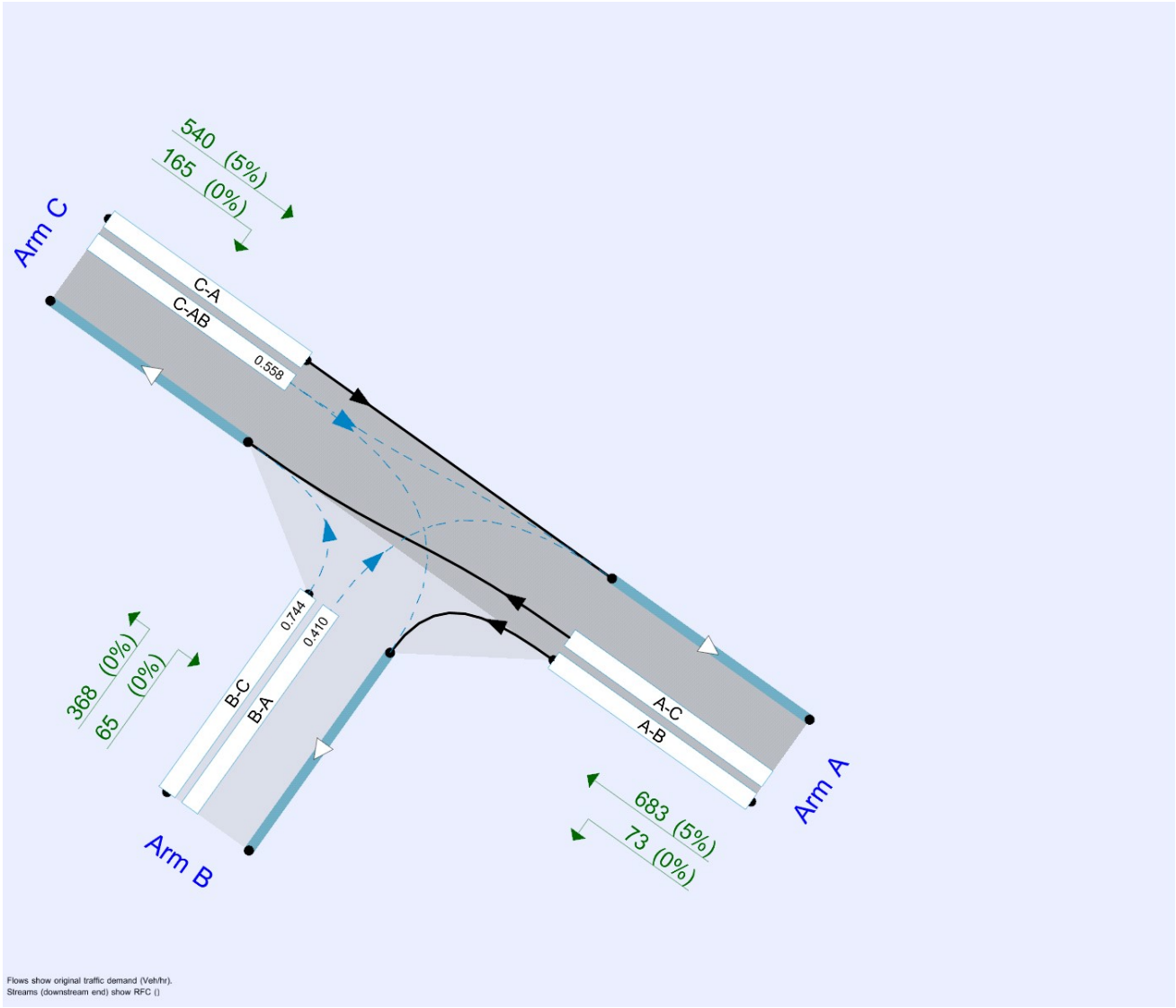
File summary

File Description

Title	
Location	
Site number	
Date	27/03/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2022	AM	FLAT	08:00	09:00	60	✓
D2	2022	PM	FLAT	17:00	18:00	60	✓
D3	2025	AM	FLAT	08:00	09:00	60	✓
D4	2025	PM	FLAT	17:00	18:00	60	✓
D5	2025 + LAP Developments	AM	FLAT	08:00	09:00	60	✓
D6	2025 + LAP Developments	PM	FLAT	17:00	18:00	60	✓
D7	2030	AM	FLAT	08:00	09:00	60	✓
D8	2030	PM	FLAT	17:00	18:00	60	✓
D9	2030 + Overall LAP	AM	FLAT	08:00	09:00	60	✓
D10	2030 + Overall LAP	PM	FLAT	17:00	18:00	60	✓
D11	2040	AM	FLAT	08:00	09:00	60	✓
D12	2040	PM	FLAT	17:00	18:00	60	✓
D13	2040 + Overall LAP	AM	FLAT	08:00	09:00	60	✓
D14	2040 + Overall LAP	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Junction 1	100.000

Junction 1 - 2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R125 Rathbeale Road (E)		Major
B	R108 Naul Road (S)		Minor
C	R125 Rathbeale Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.90			65.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	6.00	4.10	3.30	3.00	✓	1.00	85	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	566	0.099	0.250	0.157	0.358
B-C	775	0.114	0.289	-	-
C-B	612	0.228	0.228	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2022	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	362	100.000
B		✓	127	100.000
C		✓	667	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	35	327
	B	18	0	109
	C	459	208	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.16	6.50	0.2	A
B-A	0.06	11.73	0.1	B
C-AB	0.54	9.23	1.9	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	109	662	0.165	109	0.2	6.501	A
B-A	18	325	0.055	18	0.1	11.729	B
C-AB	456	844	0.541	454	1.9	9.232	A
C-A	211			211			
A-B	35			35			
A-C	327			327			

Junction 1 - 2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D2	2022	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	576	100.000
B		✓	357	100.000
C		✓	464	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	56	520
	B	40	0	317
	C	322	142	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.54	13.19	1.2	B
B-A	0.14	15.22	0.2	C
C-AB	0.37	8.04	0.9	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	317	588	0.539	316	1.2	13.188	B
B-A	40	276	0.145	40	0.2	15.219	C
C-AB	261	707	0.368	260	0.9	8.037	A
C-A	203			203			
A-B	56			56			
A-C	520			520			

Junction 1 - 2025, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D3	2025	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	378	100.000
B		✓	132	100.000
C		✓	698	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	36	342
	B	19	0	113
	C	480	218	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.17	6.61	0.2	A
B-A	0.06	12.21	0.1	B
C-AB	0.58	9.95	2.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	113	657	0.172	113	0.2	6.614	A
B-A	19	314	0.061	19	0.1	12.214	B
C-AB	497	856	0.580	494	2.2	9.953	A
C-A	201			201			
A-B	36			36			
A-C	342			342			

Junction 1 - 2025, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D4	2025	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	601	100.000
B		✓	373	100.000
C		✓	485	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	58	543
	B	42	0	331
	C	336	149	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.57	14.42	1.3	B
B-A	0.16	16.58	0.2	C
C-AB	0.40	8.33	1.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	331	578	0.573	330	1.3	14.423	B
B-A	42	259	0.162	42	0.2	16.579	C
C-AB	282	713	0.396	281	1.0	8.330	A
C-A	203			203			
A-B	58			58			
A-C	543			543			

Junction 1 - 2025 + LAP Developments, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2025 + LAP Developments	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	464	100.000
B		✓	142	100.000
C		✓	790	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	45	419
	B	29	0	113
	C	573	217	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.18	7.05	0.2	A
B-A	0.10	14.30	0.1	B
C-AB	0.65	11.23	3.2	B
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	113	623	0.181	113	0.2	7.054	A
B-A	29	280	0.103	29	0.1	14.303	B
C-AB	590	907	0.650	586	3.2	11.226	B
C-A	200			200			
A-B	45			45			
A-C	419			419			

Junction 1 - 2025 + LAP Developments, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D6	2025 + LAP Developments	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	614	100.000
B		✓	382	100.000
C		✓	570	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	59	555
	B	51	0	331
	C	421	149	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.59	15.20	1.4	C
B-A	0.21	18.79	0.3	C
C-AB	0.42	8.07	1.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	331	565	0.586	330	1.4	15.204	C
B-A	51	242	0.211	51	0.3	18.788	C
C-AB	328	772	0.424	326	1.3	8.072	A
C-A	242			242			
A-B	59			59			
A-C	555			555			

Junction 1 - 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2030	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	406	100.000
B		✓	142	100.000
C		✓	755	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	39	367
	B	20	0	122
	C	516	239	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.19	6.84	0.2	A
B-A	0.07	13.18	0.1	B
C-AB	0.66	12.07	3.2	B
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	122	648	0.188	122	0.2	6.840	A
B-A	20	293	0.068	20	0.1	13.182	B
C-AB	582	876	0.664	578	3.2	12.070	B
C-A	173			173			
A-B	39			39			
A-C	367			367			

Junction 1 - 2030, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D8	2030	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	646	100.000
B		✓	401	100.000
C		✓	522	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	62	584
	B	45	0	356
	C	362	160	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.64	17.32	1.7	C
B-A	0.20	19.80	0.2	C
C-AB	0.44	8.90	1.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	356	560	0.635	354	1.7	17.318	C
B-A	45	226	0.199	45	0.2	19.799	C
C-AB	320	723	0.443	319	1.3	8.903	A
C-A	202			202			
A-B	62			62			
A-C	584			584			

Junction 1 - 2030 + Overall LAP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D9	2030 + Overall LAP	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	506	100.000
B		✓	153	100.000
C		✓	842	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	49	457
	B	31	0	122
	C	608	234	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.20	7.40	0.3	A
B-A	0.12	15.88	0.1	C
C-AB	0.74	14.54	4.9	B
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	122	608	0.201	122	0.3	7.397	A
B-A	31	257	0.120	31	0.1	15.877	C
C-AB	683	925	0.738	678	4.9	14.537	B
C-A	159			159			
A-B	49			49			
A-C	457			457			

Junction 1 - 2030 + Overall LAP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D10	2030 + Overall LAP	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	734	100.000
B		✓	419	100.000
C		✓	687	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	71	663
	B	63	0	356
	C	527	160	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.70	23.10	2.3	C
B-A	0.36	31.73	0.6	D
C-AB	0.53	9.16	2.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	356	507	0.702	354	2.3	23.103	C
B-A	63	175	0.359	62	0.6	31.731	D
C-AB	439	830	0.529	437	2.1	9.157	A
C-A	248			248			
A-B	71			71			
A-C	663			663			

Junction 1 - 2040, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D11	2040	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	421	100.000
B		✓	147	100.000
C		✓	775	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	41	380
	B	21	0	126
	C	533	242	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.20	6.96	0.2	A
B-A	0.07	13.61	0.1	B
C-AB	0.69	12.78	3.6	B
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	126	643	0.196	126	0.2	6.960	A
B-A	21	285	0.074	21	0.1	13.612	B
C-AB	608	885	0.687	604	3.6	12.781	B
C-A	167			167			
A-B	41			41			
A-C	380			380			

Junction 1 - 2040, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D12	2040	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	669	100.000
B		✓	415	100.000
C		✓	539	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	65	604
	B	47	0	368
	C	374	165	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.67	19.26	2.0	C
B-A	0.22	22.03	0.3	C
C-AB	0.47	9.23	1.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	368	551	0.668	366	2.0	19.264	C
B-A	47	210	0.224	47	0.3	22.031	C
C-AB	339	728	0.466	338	1.4	9.232	A
C-A	200			200			
A-B	65			65			
A-C	604			604			

Junction 1 - 2040 + Overall LAP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		8.97	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D13	2040 + Overall LAP	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	521	100.000
B		✓	157	100.000
C		✓	868	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	51	470
	B	31	0	126
	C	626	242	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.21	7.53	0.3	A
B-A	0.13	16.62	0.1	C
C-AB	0.78	17.06	6.2	C
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	126	604	0.209	126	0.3	7.531	A
B-A	31	247	0.125	31	0.1	16.617	C
C-AB	731	936	0.782	725	6.2	17.057	C
C-A	137			137			
A-B	51			51			
A-C	470			470			

Junction 1 - 2040 + Overall LAP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		8.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D14	2040 + Overall LAP	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	756	100.000
B		✓	433	100.000
C		✓	705	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	73	683
	B	65	0	368
	C	540	165	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.74	27.27	2.8	D
B-A	0.41	37.98	0.7	E
C-AB	0.56	9.68	2.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	368	495	0.744	365	2.8	27.268	D
B-A	65	158	0.410	64	0.7	37.982	E
C-AB	466	836	0.558	464	2.4	9.680	A
C-A	239			239			
A-B	73			73			
A-C	683			683			

TRANSYT 15

Version: 15.5.2.7994

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Filename: Junction 2 - AM.t16
Path: M:\Projects\17\17-144\Design\Traffic\Junction Modelling\MODELLING MAY 2021\Junction 2
Report generation date: 01/04/2022 13:42:41

»A3 - Junction 2 - 2025 + LAP Developments : D3 - 2025 + LAP Developments, AM* :
»A5 - Junction 2 - 2030 + Overall LAP : D5 - 2030 + Overall LAP, AM* :
»A7 - Junction 2 - 2040 + Overall LAP : D7 - 2040 + Overall LAP, AM* :

File summary

File description

File title	(untitled)
Location	
Site number	
UTCRegion	
Driving side	Left
Date	06/12/2011
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	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
			✓		✓		✓	✓					

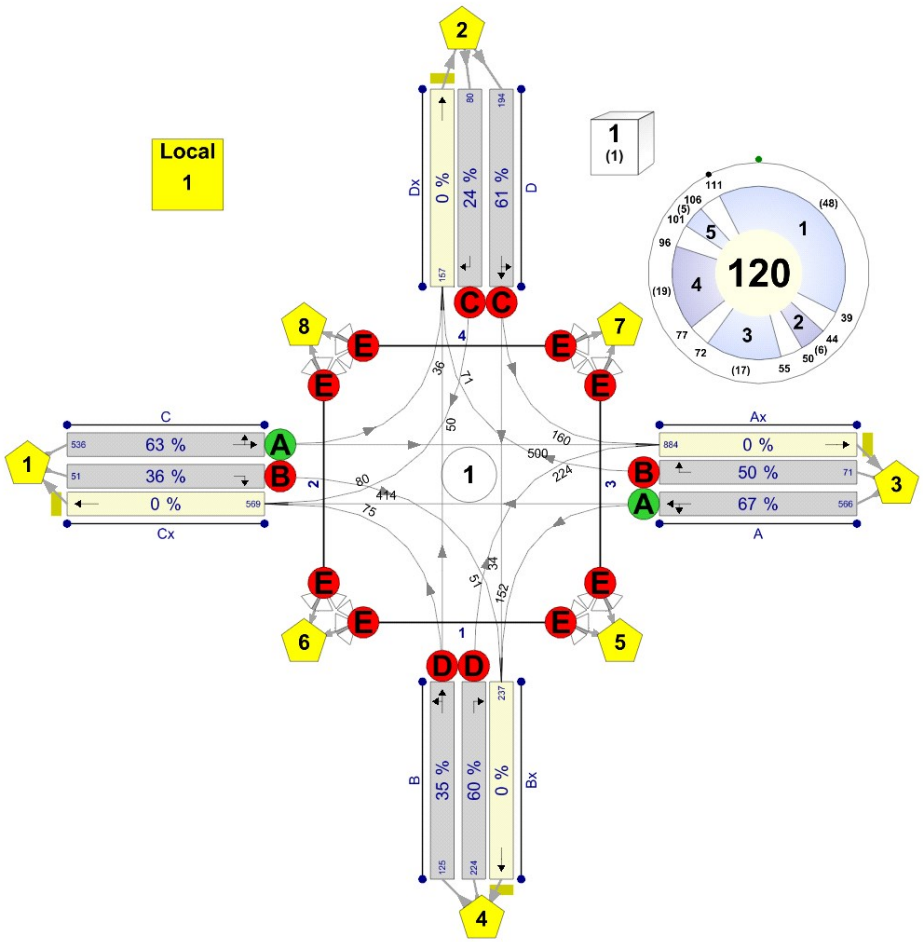
Units

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	✓

Network Diagrams



(untitled)
Diagram produced using TRANSYT 15.5.2.7994

A3 - Junction 2 - 2025 + LAP Developments
D3 - 2025 + LAP Developments, AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:42:09	01/04/2022 13:42:09	08:00	120	372.75	24.96	62.00	A/1	0	0	A/1	Dx/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
Junction 2 - 2025 + LAP Developments		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2025 + LAP Developments, AM				08:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	50.00	✓	Sum of lanes	2036	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Ax	1	(untitled)		✓	135.02						Normal	
B	1	(untitled)		✓	50.00	✓	Sum of lanes	2018	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Bx	1	(untitled)		✓	137.76						Normal	
C	1	(untitled)		✓	50.00	✓	Sum of lanes	2053	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Cx	1	(untitled)		✓	137.55						Normal	
D	1	(untitled)		✓	50.00	✓	Sum of lanes	1997	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Dx	1	(untitled)		✓	134.83						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	29	40.00	✓	2036
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	60	45.00	✓	2018
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	7	40.00	✓	2053
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Cx	1	1	(untitled)											
D	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	82	40.00	✓	1997
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Dx	1	1	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	526	526
	2	71	71
Ax	1	806	806
B	1	108	108
	2	194	194
Bx	1	241	241
C	1	488	488
	2	52	52
Cx	1	516	516
D	1	194	194
	2	80	80
Dx	1	150	150

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
	2	1	B	
B	1	1	D	
	2	1	D	
C	1	1	A	
	2	1	B	
D	1	1	C	
	2	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
(ALL)	(ALL)	6.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	16.20	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	16.53	30.00	✓	Nearside	40.00
Cx	1	1	A/1	Cx/1	16.51	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	16.18	30.00	✓	Nearside	40.00
Ax	1	2	D/1	Ax/1	16.20	30.00	✓	Nearside	40.00
Bx	1	2	D/1	Bx/1	16.53	30.00	✓	Straight	Straight Movement
Cx	1	2	B/1	Cx/1	16.51	30.00	✓	Nearside	45.00
Dx	1	2	B/1	Dx/1	16.18	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	16.20	30.00	✓	Offside	47.00
Bx	1	3	C/2	Bx/1	16.53	30.00	✓	Offside	52.00
Cx	1	3	D/2	Cx/1	16.51	30.00	✓	Offside	52.00
Dx	1	3	A/2	Dx/1	16.18	30.00	✓	Offside	47.00

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	36	452	52	0	0	0	0
	2	80	0	160	34	0	0	0	0
	3	371	71	0	155	0	0	0	0
	4	65	43	194	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	D/1, D/2	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C/1, Dx/1	Normal	36
	2		1	3	C/1, Ax/1	Normal	452
	5		2	3	D/1, Ax/1	Normal	160
	6		2	4	D/1, Bx/1	Normal	34
	9		3	4	A/1, Bx/1	Normal	155
	10		3	1	A/1, Cx/1	Normal	371
	11		4	2	B/1, Dx/1	Normal	43
	13		4	1	B/1, Cx/1	Normal	65
	19		3	2	A/2, Dx/1	Normal	71
	20		4	3	B/2, Ax/1	Normal	194
	43		1	4	C/2, Bx/1	Normal	52
	44		2	1	D/2, Cx/1	Normal	80

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	2	3	Traffic	
	B	(untitled)	5	300	2	3	Traffic	
	C	(untitled)	5	300	2	3	Traffic	
	D	(untitled)	5	300	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1
	5	E	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	39, 50, 73, 96, 106

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	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	A	111	39	48	1	5
	2	✓	2	B	44	50	6	1	5
	3	✓	3	C	55	73	18	1	5
	4	✓	4	D	78	96	18	1	5
	5	✓	5	E	101	106	5	1	5

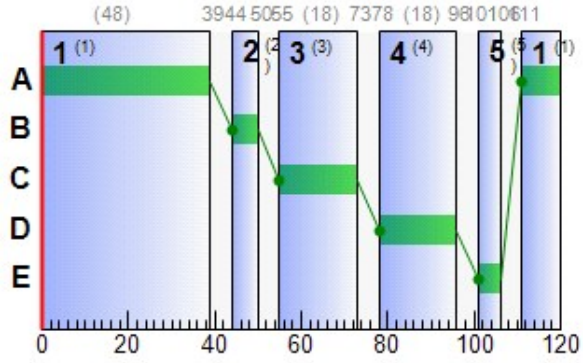
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	111	39	48
	B	1	✓	44	50	6
	C	1	✓	55	73	18
	D	1	✓	78	96	18
	E	1	✓	101	106	5

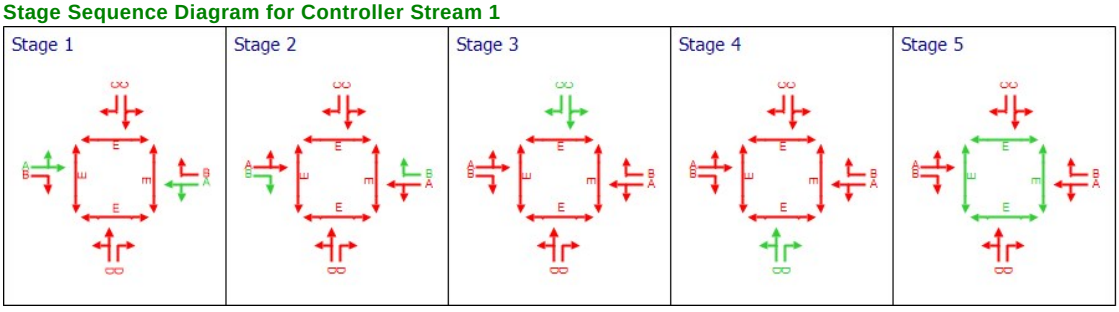
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	111	39	48
A	2	1	1	B	44	50	6
B	1	1	1	D	78	96	18
B	2	1	1	D	78	96	18
C	1	1	1	A	111	39	48
C	2	1	1	B	44	50	6
D	1	1	1	C	55	73	18
D	2	1	1	C	55	73	18

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)
08:00-09:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Calculated capacity (PCU/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	A	526	2036	48	848	62	45	30.97	14.24	163.72	36.97
		2		B	71	2140	6	143	50	81	66.32	2.51	28.86	72.32
	Ax	1	(untitled)		806	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.20
	B	1	(untitled)	D	108	2018	18	336	32	180	46.56	3.23	37.10	52.56
		2		D	194	2140	18	357	54	65	51.78	6.19	71.24	57.78
	Bx	1	(untitled)		241	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.53
	C	1	(untitled)	A	488	2053	48	855	57	58	29.57	12.71	146.19	35.57
		2		B	52	2147	6	143	36	148	60.70	1.75	20.12	66.70
	Cx	1	(untitled)		516	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.51
	D	1	(untitled)	C	194	1997	18	333	58	54	53.61	6.33	72.79	59.61
		2		C	80	2147	18	358	22	303	44.74	2.32	26.69	50.74
	Dx	1	(untitled)		150	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.18

Data Entry - Stage Start and End

Resultant Stage

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	111	39	48	1	5
	2	✓	2	B	44	50	6	1	5
	3	✓	3	C	55	73	18	1	5
	4	✓	4	D	78	96	18	1	5
	5	✓	5	E	101	106	5	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	2	3	Traffic
	B	B	5	300	2	3	Traffic
	C	C	5	300	2	3	Traffic
	D	D	5	300	2	3	Traffic
	E	E	5	5	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2036	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Ax	1	✓	135.02	NetworkDefault	0.00	Normal						100	100
B	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2018	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Bx	1	✓	137.76	NetworkDefault	0.00	Normal						100	100
C	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2053	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Cx	1	✓	137.55	NetworkDefault	0.00	Normal						100	100
D	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	1997	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Dx	1	✓	134.83	NetworkDefault	0.00	Normal						100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
08:00-09:00	(ALL)	(ALL)	50	11	5	55.58	1.60

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	62	45	526	2036	48	30.97	14.24	163.72	64.26	5.26	69.51
		2	50	81	71	2140	6	66.32	2.51	28.86	18.57	0.93	19.51
	Ax	1	0	Unrestricted	806	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	32	180	108	2018	18	46.56	3.23	37.10	19.84	1.20	21.04
		2	54	65	194	2140	18	51.78	6.19	71.24	39.62	2.30	41.93
	Bx	1	0	Unrestricted	241	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	57	58	488	2053	48	29.57	12.71	146.19	56.91	4.71	61.62
		2	36	148	52	2147	6	60.70	1.75	20.12	12.45	0.65	13.10
	Cx	1	0	Unrestricted	516	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	58	54	194	1997	18	53.61	6.33	72.79	41.02	2.35	43.38
		2	22	303	80	2147	18	44.74	2.32	26.69	14.12	0.86	14.98
	Dx	1	0	Unrestricted	150	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	526	526	0		2036	848	62		45	0.00	48
		2	71	71	0		2140	143	50		81	0.00	6
	Ax	1	806	806	0		Unrestricted	Unrestricted	0		Unrestricted	0.63	120
	B	1	108	108	0		2018	336	32		180	0.00	18
		2	194	194	0		2140	357	54		65	0.00	18
	Bx	1	241	241	0		Unrestricted	Unrestricted	0		Unrestricted	0.75	120
	C	1	488	488	0		2053	855	57		58	0.00	48
		2	52	52	0		2147	143	36		148	0.00	6
	Cx	1	516	516	0		Unrestricted	Unrestricted	0		Unrestricted	0.71	120
	D	1	194	194	0		1997	333	58		54	0.00	18
		2	80	80	0		2147	358	22		303	0.00	18
	Dx	1	150	150	0		Unrestricted	Unrestricted	0		Unrestricted	0.88	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	6.00	30.97	4.02	0.50	64.26	79.71	404.32	14.96	5.26
		2	6.00	66.32	1.07	0.24	18.57	104.80	67.34	7.06	0.93
	Ax	1	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	6.00	46.56	1.32	0.08	19.84	88.61	93.44	2.26	1.20
		2	6.00	51.78	2.47	0.32	39.62	94.75	174.30	9.51	2.30
	Bx	1	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6.00	29.57	3.63	0.38	56.91	76.93	364.17	11.24	4.71
		2	6.00	60.70	0.77	0.10	12.45	99.85	48.89	3.03	0.65
	Cx	1	16.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	6.00	53.61	2.49	0.40	41.02	96.78	175.89	11.86	2.35
		2	6.00	44.74	0.96	0.03	14.12	86.05	67.88	0.96	0.86
	Dx	1	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	14.24	8.70	163.72	0.90	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.51	8.70	28.86	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	23.48	0.00	0.00	0.00	0.00	8.00	0.00	8.00	
	B	1	0.00	3.23	8.70	37.10	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	6.19	8.70	71.24	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	23.96	0.00	0.00	0.00	0.00	35.00	0.00	35.00	
	C	1	0.00	12.71	8.70	146.19	0.51	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.75	8.70	20.12	0.00	0.00	0.00	5.00	0.00	5.00	
	Cx	1	0.00	0.00	23.92	0.00	0.00	0.00	0.00	15.00	0.00	15.00	
	D	1	0.00	6.33	8.70	72.79	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.32	8.70	26.69	0.00	0.00	0.00	0.00	0.00	0.00	
	Dx	1	0.00	0.00	23.45	0.00	0.00	0.00	0.00	54.00	0.00	54.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	26.30	5.40	4.87	36.97
		2	3.55	1.43	2.49	72.32
	Ax	1	108.83	3.63	30.00	16.20
	B	1	5.40	1.58	3.42	52.56
		2	9.70	3.11	3.12	57.78
	Bx	1	33.20	1.11	30.00	16.53
	C	1	24.40	4.82	5.06	35.57
		2	2.60	0.96	2.70	66.70
	Cx	1	70.98	2.37	30.00	16.51
	D	1	9.70	3.21	3.02	59.61
		2	4.00	1.13	3.55	50.74
	Dx	1	20.23	0.67	30.00	16.18

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (PCU)	Max End of Green Queue EoTS (PCU)	Max End of Red Queue EoTS (PCU)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	14.24	0.50	10.73	1.00	0.00	69.51
		2	0.00	0.00	✓	2.51	0.24	2.45	1.00	0.00	19.51
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	3.23	0.08	3.08	1.00	0.00	21.04
		2	0.00	0.00	✓	6.20	0.32	5.71	1.00	0.00	41.93
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	12.71	0.38	9.87	1.00	0.00	61.62
		2	0.00	0.00	✓	1.75	0.10	1.72	1.00	0.00	13.10
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	1	0.00	0.00	✓	6.33	0.40	5.79	1.00	0.00	43.38
		2	0.00	0.00	✓	2.32	0.03	2.25	1.00	0.00	14.98
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	(ALL)	(ALL)	50	50	0		11000	458	11		725	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	1	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25
	2	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	3	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	4	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	0.00	0.00	1.60	1.00	0.00	10.96

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:42:09	01/04/2022 13:42:09	08:00	120	372.75	24.96	62.00	A/1	0	0	A/1	Dx/1	A/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	62	0	3426	660	19.74	266.79	18.27	285.06

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	11	400	40	55.58	87.70	87.70

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	3826	3826	0		62		45	700

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	10.63	23.49	22.91	2.05	354.48	38.08	1396.23	60.90	18.27

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	163.72	0.00	117.00	0.00	117.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	322.28	36.26	8.89

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	372.75

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	51.7	51.8	83.2	0.0	0.0	0.0	0.0
	2	67.2	0.0	75.8	76.1	0.0	0.0	0.0	0.0
	3	53.5	88.5	0.0	53.5	0.0	0.0	0.0	0.0
	4	69.1	68.7	74.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	61.3	61.9	0.0
	6	0.0	0.0	0.0	0.0	61.3	0.0	0.0	61.9
	7	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.3
	8	0.0	0.0	0.0	0.0	0.0	61.9	61.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (PCU/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (PCU/hr)	Avg journey time (s)
1	1	2	36		51.75		36	51.75
2	1	3	452		51.77		452	51.77
5	2	3	160		75.81		160	75.81
6	2	4	34		76.14		34	76.14
9	3	4	155		53.50		155	53.50
10	3	1	371		53.48		371	53.48
11	4	2	43		68.74		43	68.74
13	4	1	65		69.07		65	69.07
17	8	7		50		61.25	50	61.25
18	8	6		50		61.92	50	61.92
19	3	2	71		88.50		71	88.50
20	4	3	194		73.98		194	73.98
22	5	7		50		61.92	50	61.92
23	5	6		50		61.25	50	61.25
34	6	8		50		61.92	50	61.92
35	6	5		50		61.25	50	61.25
41	7	8		50		61.25	50	61.25
42	7	5		50		61.92	50	61.92
43	1	4	52		83.23		52	83.23
44	2	1	80		67.24		80	67.24

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)
A	1	(untitled)	1	1	A	526 <	2036	48	0.00	62	45	36.97	30.97	79.71	14.24 +
	2		1	1	B	71	2140	6	0.00	50	81	72.32	66.32	104.80	2.51
Ax	1	(untitled)				806	Unrestricted	120	8.00	0	Unrestricted	16.20	0.00	0.00	0.00
B	1	(untitled)	1	1	D	108	2018	18	0.00	32	180	52.56	46.56	88.61	3.23
	2		1	1	D	194	2140	18	0.00	54	65	57.78	51.78	94.75	6.19
Bx	1	(untitled)				241	Unrestricted	120	35.00	0	Unrestricted	16.53	0.00	0.00	0.00
C	1	(untitled)	1	1	A	488 <	2053	48	0.00	57	58	35.57	29.57	76.93	12.71 +
	2		1	1	B	52	2147	6	5.00	36	148	66.70	60.70	99.85	1.75
Cx	1	(untitled)				516	Unrestricted	120	15.00	0	Unrestricted	16.51	0.00	0.00	0.00
D	1	(untitled)	1	1	C	194	1997	18	0.00	58	54	59.61	53.61	96.78	6.33
	2		1	1	C	80	2147	18	0.00	22	303	50.74	44.74	86.05	2.32
Dx	1	(untitled)				150	Unrestricted	120	54.00	0	Unrestricted	16.18	0.00	0.00	0.00

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0

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	318.88	29.42	10.84	16.73	2.05	266.79	18.27	0.00	285.06
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	322.28	36.26	8.89	22.91	2.05	354.48	18.27	0.00	372.75

- *< = 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***

A5 - Junction 2 - 2030 + Overall LAP
D5 - 2030 + Overall LAP, AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
5	01/04/2022 13:42:09	01/04/2022 13:42:10	08:00	120	397.24	26.59	65.12	A/1	0	0	A/1	Dx/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
Junction 2 - 2030 + Overall LAP		D5	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2030 + Overall LAP, AM				08:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	50.00	✓	Sum of lanes	2038	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Ax	1	(untitled)		✓	135.02						Normal	
B	1	(untitled)		✓	50.00	✓	Sum of lanes	2018	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Bx	1	(untitled)		✓	137.76						Normal	
C	1	(untitled)		✓	50.00	✓	Sum of lanes	2053	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Cx	1	(untitled)		✓	137.55						Normal	
D	1	(untitled)		✓	50.00	✓	Sum of lanes	1997	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Dx	1	(untitled)		✓	134.83						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	27	40.00	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	60	45.00	✓	2018
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	7	40.00	✓	2053
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Cx	1	1	(untitled)											
D	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	82	40.00	✓	1997
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Dx	1	1	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	553	553
	2	71	71
Ax	1	868	868
B	1	125	125
	2	224	224
Bx	1	237	237
C	1	520	520
	2	51	51
Cx	1	556	556
D	1	194	194
	2	80	80
Dx	1	157	157

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
	2	1	B	
B	1	1	D	
	2	1	D	
C	1	1	A	
	2	1	B	
D	1	1	C	
	2	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
(ALL)	(ALL)	6.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	16.20	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	16.53	30.00	✓	Nearside	40.00
Cx	1	1	A/1	Cx/1	16.51	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	16.18	30.00	✓	Nearside	40.00
Ax	1	2	D/1	Ax/1	16.20	30.00	✓	Nearside	40.00
Bx	1	2	D/1	Bx/1	16.53	30.00	✓	Straight	Straight Movement
Cx	1	2	B/1	Cx/1	16.51	30.00	✓	Nearside	45.00
Dx	1	2	B/1	Dx/1	16.18	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	16.20	30.00	✓	Offside	47.00
Bx	1	3	C/2	Bx/1	16.53	30.00	✓	Offside	52.00
Cx	1	3	D/2	Cx/1	16.51	30.00	✓	Offside	52.00
Dx	1	3	A/2	Dx/1	16.18	30.00	✓	Offside	47.00

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	36	484	51	0	0	0	0
	2	80	0	160	34	0	0	0	0
	3	401	71	0	152	0	0	0	0
	4	75	50	224	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	D/1, D/2	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C/1, Dx/1	Normal	36
	2		1	3	C/1, Ax/1	Normal	484
	5		2	3	D/1, Ax/1	Normal	160
	6		2	4	D/1, Bx/1	Normal	34
	9		3	4	A/1, Bx/1	Normal	152
	10		3	1	A/1, Cx/1	Normal	401
	11		4	2	B/1, Dx/1	Normal	50
	13		4	1	B/1, Cx/1	Normal	75
	19		3	2	A/2, Dx/1	Normal	71
	20		4	3	B/2, Ax/1	Normal	224
	43		1	4	C/2, Bx/1	Normal	51
	44		2	1	D/2, Cx/1	Normal	80

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	2	3	Traffic	
	B	(untitled)	5	300	2	3	Traffic	
	C	(untitled)	5	300	2	3	Traffic	
	D	(untitled)	5	300	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1
	5	E	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	39, 50, 72, 96, 106

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	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	A	111	39	48	1	5
	2	✓	2	B	44	50	6	1	5
	3	✓	3	C	55	72	17	1	5
	4	✓	4	D	77	96	19	1	5
	5	✓	5	E	101	106	5	1	5

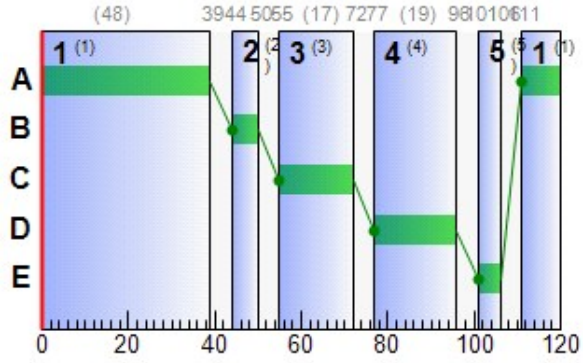
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	111	39	48
	B	1	✓	44	50	6
	C	1	✓	55	72	17
	D	1	✓	77	96	19
	E	1	✓	101	106	5

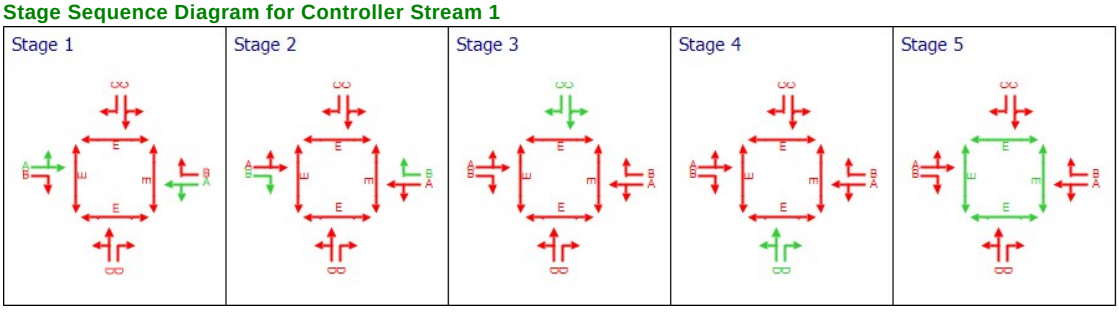
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	111	39	48
A	2	1	1	B	44	50	6
B	1	1	1	D	77	96	19
B	2	1	1	D	77	96	19
C	1	1	1	A	111	39	48
C	2	1	1	B	44	50	6
D	1	1	1	C	55	72	17
D	2	1	1	C	55	72	17

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)
08:00-09:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Calculated capacity (PCU/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	A	553	2038	48	849	65	38	31.95	15.35	176.52	37.95
		2		B	71	2140	6	143	50	81	66.32	2.51	28.86	72.32
	Ax	1	(untitled)		868	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.20
	B	1	(untitled)	D	125	2018	19	353	35	154	46.33	3.74	43.04	52.33
		2		D	224	2140	19	375	60	50	52.68	7.28	83.76	58.68
	Bx	1	(untitled)		237	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.53
	C	1	(untitled)	A	520	2053	48	855	61	48	30.59	13.90	159.87	36.59
		2		B	51	2147	6	143	36	153	60.47	1.71	19.70	66.47
	Cx	1	(untitled)		556	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.51
	D	1	(untitled)	C	194	1997	17	316	61	47	55.96	6.46	74.29	61.96
		2		C	80	2147	17	340	24	282	45.78	2.35	26.99	51.78
	Dx	1	(untitled)		157	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.18

Data Entry - Stage Start and End

Resultant Stage

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	111	39	48	1	5
	2	✓	2	B	44	50	6	1	5
	3	✓	3	C	55	72	17	1	5
	4	✓	4	D	77	96	19	1	5
	5	✓	5	E	101	106	5	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	2	3	Traffic
	B	B	5	300	2	3	Traffic
	C	C	5	300	2	3	Traffic
	D	D	5	300	2	3	Traffic
	E	E	5	5	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Ax	1	✓	135.02	NetworkDefault	0.00	Normal						100	100
B	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2018	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Bx	1	✓	137.76	NetworkDefault	0.00	Normal						100	100
C	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2053	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Cx	1	✓	137.55	NetworkDefault	0.00	Normal						100	100
D	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	1997	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Dx	1	✓	134.83	NetworkDefault	0.00	Normal						100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
08:00-09:00	(ALL)	(ALL)	50	11	5	55.58	1.60

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	65	38	553	2038	48	31.95	15.35	176.52	69.68	5.64	75.32
		2	50	81	71	2140	6	66.32	2.51	28.86	18.57	0.93	19.51
	Ax	1	0	Unrestricted	868	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	35	154	125	2018	19	46.33	3.74	43.04	22.84	1.39	24.24
		2	60	50	224	2140	19	52.68	7.28	83.76	46.54	2.71	49.25
	Bx	1	0	Unrestricted	237	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	61	48	520	2053	48	30.59	13.90	159.87	62.73	5.15	67.88
		2	36	153	51	2147	6	60.47	1.71	19.70	12.16	0.64	12.80
	Cx	1	0	Unrestricted	556	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	61	47	194	1997	17	55.96	6.46	74.29	42.82	2.40	45.23
		2	24	282	80	2147	17	45.78	2.35	26.99	14.45	0.87	15.32
	Dx	1	0	Unrestricted	157	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	553	553	0		2038	849	65		38	0.00	48
		2	71	71	0		2140	143	50		81	0.00	6
	Ax	1	868	868	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	120
	B	1	125	125	0		2018	353	35		154	0.00	19
		2	224	224	0		2140	375	60		50	0.00	19
	Bx	1	237	237	0		Unrestricted	Unrestricted	0		Unrestricted	0.74	120
	C	1	520	520	0		2053	855	61		48	0.00	48
		2	51	51	0		2147	143	36		153	0.00	6
	Cx	1	556	556	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	120
	D	1	194	194	0		1997	316	61		47	0.00	17
		2	80	80	0		2147	340	24		282	0.00	17
	Dx	1	157	157	0		Unrestricted	Unrestricted	0		Unrestricted	0.89	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	6.00	31.95	4.30	0.60	69.68	81.29	431.60	17.94	5.64
		2	6.00	66.32	1.07	0.24	18.57	104.80	67.34	7.06	0.93
	Ax	1	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	6.00	46.33	1.51	0.10	22.84	88.82	108.14	2.88	1.39
		2	6.00	52.68	2.84	0.44	46.54	96.41	202.98	12.98	2.71
	Bx	1	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6.00	30.59	3.95	0.47	62.73	78.91	396.40	13.95	5.15
		2	6.00	60.47	0.76	0.10	12.16	99.68	47.95	2.89	0.64
	Cx	1	16.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	6.00	55.96	2.54	0.48	42.82	98.77	177.53	14.09	2.40
		2	6.00	45.78	0.98	0.04	14.45	87.03	68.54	1.08	0.87
	Dx	1	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	15.35	8.70	176.52	1.23	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.51	8.70	28.86	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	23.48	0.00	0.00	0.00	0.00	7.00	0.00	7.00	
	B	1	0.00	3.74	8.70	43.04	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	7.28	8.70	83.76	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	23.96	0.00	0.00	0.00	0.00	35.00	0.00	35.00	
	C	1	0.00	13.90	8.70	159.87	0.80	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.71	8.70	19.70	0.00	0.00	0.00	5.00	0.00	5.00	
	Cx	1	0.00	0.00	23.92	0.00	0.00	0.00	0.00	15.00	0.00	15.00	
	D	1	0.00	6.46	8.70	74.29	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.35	8.70	26.99	0.00	0.00	0.00	0.00	0.00	0.00	
	Dx	1	0.00	0.00	23.45	0.00	0.00	0.00	0.00	50.00	0.00	50.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	27.65	5.83	4.74	37.95
		2	3.55	1.43	2.49	72.32
	Ax	1	117.20	3.91	30.00	16.20
	B	1	6.25	1.82	3.44	52.33
		2	11.20	3.65	3.07	58.68
	Bx	1	32.65	1.09	30.00	16.53
	C	1	26.00	5.28	4.92	36.59
		2	2.55	0.94	2.71	66.47
	Cx	1	76.48	2.55	30.00	16.51
	D	1	9.70	3.34	2.91	61.96
		2	4.00	1.15	3.48	51.78
	Dx	1	21.17	0.71	30.00	16.18

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (PCU)	Max End of Green Queue EoTS (PCU)	Max End of Red Queue EoTS (PCU)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	15.35	0.61	11.36	1.00	0.00	75.32
		2	0.00	0.00	✓	2.51	0.24	2.45	1.00	0.00	19.51
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	3.74	0.10	3.53	1.00	0.00	24.24
		2	0.00	0.00	✓	7.29	0.44	6.60	1.00	0.00	49.25
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	13.90	0.47	10.58	1.00	0.00	67.88
		2	0.00	0.00	✓	1.71	0.10	1.68	1.00	0.00	12.80
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	1	0.00	0.00	✓	6.46	0.48	5.93	1.00	0.00	45.23
		2	0.00	0.00	✓	2.35	0.04	2.28	1.00	0.00	15.32
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	(ALL)	(ALL)	50	50	0		11000	458	11		725	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	1	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25
	2	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	3	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	4	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	0.00	0.00	1.60	1.00	0.00	10.96

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
5	01/04/2022 13:42:09	01/04/2022 13:42:10	08:00	120	397.24	26.59	65.12	A/1	0	0	A/1	Dx/1	A/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	65	0	3636	660	20.21	289.81	19.73	309.54

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	11	400	40	55.58	87.70	87.70

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	4036	4036	0		65		38	700

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	10.66	23.71	24.12	2.46	377.51	38.98	1500.49	72.88	19.73

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	176.52	0.00	112.00	0.00	112.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	341.79	38.53	8.87

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	397.24

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	52.8	52.8	83.0	0.0	0.0	0.0	0.0
	2	68.3	0.0	78.2	78.5	0.0	0.0	0.0	0.0
	3	54.5	88.5	0.0	54.5	0.0	0.0	0.0	0.0
	4	68.8	68.5	74.9	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	61.3	61.9	0.0
	6	0.0	0.0	0.0	0.0	61.3	0.0	0.0	61.9
	7	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.3
	8	0.0	0.0	0.0	0.0	0.0	61.9	61.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (PCU/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (PCU/hr)	Avg journey time (s)
1	1	2	36		52.77		36	52.77
2	1	3	484		52.79		484	52.79
5	2	3	160		78.16		160	78.16
6	2	4	34		78.49		34	78.49
9	3	4	152		54.48		152	54.48
10	3	1	401		54.45		401	54.45
11	4	2	50		68.51		50	68.51
13	4	1	75		68.84		75	68.84
17	8	7		50		61.25	50	61.25
18	8	6		50		61.92	50	61.92
19	3	2	71		88.50		71	88.50
20	4	3	224		74.88		224	74.88
22	5	7		50		61.92	50	61.92
23	5	6		50		61.25	50	61.25
34	6	8		50		61.92	50	61.92
35	6	5		50		61.25	50	61.25
41	7	8		50		61.25	50	61.25
42	7	5		50		61.92	50	61.92
43	1	4	51		83.00		51	83.00
44	2	1	80		68.29		80	68.29

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)
A	1	(untitled)	1	1	A	553 <	2038	48	0.00	65	38	37.95	31.95	81.29	15.35 +
	2		1	1	B	71	2140	6	0.00	50	81	72.32	66.32	104.80	2.51
Ax	1	(untitled)				868	Unrestricted	120	7.00	0	Unrestricted	16.20	0.00	0.00	0.00
B	1	(untitled)	1	1	D	125	2018	19	0.00	35	154	52.33	46.33	88.82	3.74
	2		1	1	D	224	2140	19	0.00	60	50	58.68	52.68	96.41	7.28
Bx	1	(untitled)				237	Unrestricted	120	35.00	0	Unrestricted	16.53	0.00	0.00	0.00
C	1	(untitled)	1	1	A	520 <	2053	48	0.00	61	48	36.59	30.59	78.91	13.90 +
	2		1	1	B	51	2147	6	5.00	36	153	66.47	60.47	99.68	1.71
Cx	1	(untitled)				556	Unrestricted	120	15.00	0	Unrestricted	16.51	0.00	0.00	0.00
D	1	(untitled)	1	1	C	194	1997	17	0.00	61	47	61.96	55.96	98.77	6.46
	2		1	1	C	80	2147	17	0.00	24	282	51.78	45.78	87.03	2.35
Dx	1	(untitled)				157	Unrestricted	120	50.00	0	Unrestricted	16.18	0.00	0.00	0.00

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0

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	338.39	31.69	10.68	17.95	2.46	289.81	19.73	0.00	309.54
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	341.79	38.53	8.87	24.12	2.46	377.51	19.73	0.00	397.24

- *< = 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***

A7 - Junction 2 - 2040 + Overall LAP
D7 - 2040 + Overall LAP, AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
7	01/04/2022 13:42:10	01/04/2022 13:42:11	08:00	120	403.56	27.00	66.65	A/1	0	0	A/1	Dx/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
Junction 2 - 2040 + Overall LAP		D7	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2040 + Overall LAP, AM				08:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	50.00	✓	Sum of lanes	2038	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Ax	1	(untitled)		✓	135.02						Normal	
B	1	(untitled)		✓	50.00	✓	Sum of lanes	2018	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Bx	1	(untitled)		✓	137.76						Normal	
C	1	(untitled)		✓	50.00	✓	Sum of lanes	2053	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Cx	1	(untitled)		✓	137.55						Normal	
D	1	(untitled)		✓	50.00	✓	Sum of lanes	1997	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Dx	1	(untitled)		✓	134.83						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	27	40.00	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	60	45.00	✓	2018
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	7	40.00	✓	2053
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Cx	1	1	(untitled)											
D	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	82	40.00	✓	1997
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Dx	1	1	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	566	566
	2	71	71
Ax	1	884	884
B	1	125	125
	2	224	224
Bx	1	237	237
C	1	536	536
	2	51	51
D	1	194	194
	2	80	80
Dx	1	157	157

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
	2	1	B	
B	1	1	D	
	2	1	D	
C	1	1	A	
	2	1	B	
D	1	1	C	
	2	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
(ALL)	(ALL)	6.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	16.20	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	16.53	30.00	✓	Nearside	40.00
Cx	1	1	A/1	Cx/1	16.51	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	16.18	30.00	✓	Nearside	40.00
Ax	1	2	D/1	Ax/1	16.20	30.00	✓	Nearside	40.00
Bx	1	2	D/1	Bx/1	16.53	30.00	✓	Straight	Straight Movement
Cx	1	2	B/1	Cx/1	16.51	30.00	✓	Nearside	45.00
Dx	1	2	B/1	Dx/1	16.18	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	16.20	30.00	✓	Offside	47.00
Bx	1	3	C/2	Bx/1	16.53	30.00	✓	Offside	52.00
Cx	1	3	D/2	Cx/1	16.51	30.00	✓	Offside	52.00
Dx	1	3	A/2	Dx/1	16.18	30.00	✓	Offside	47.00

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	36	500	51	0	0	0	0
	2	80	0	160	34	0	0	0	0
	3	414	71	0	152	0	0	0	0
	4	75	50	224	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	D/1, D/2	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C/1, Dx/1	Normal	36
	2		1	3	C/1, Ax/1	Normal	500
	5		2	3	D/1, Ax/1	Normal	160
	6		2	4	D/1, Bx/1	Normal	34
	9		3	4	A/1, Bx/1	Normal	152
	10		3	1	A/1, Cx/1	Normal	414
	11		4	2	B/1, Dx/1	Normal	50
	13		4	1	B/1, Cx/1	Normal	75
	19		3	2	A/2, Dx/1	Normal	71
	20		4	3	B/2, Ax/1	Normal	224
	43		1	4	C/2, Bx/1	Normal	51
	44		2	1	D/2, Cx/1	Normal	80

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	2	3	Traffic	
	B	(untitled)	5	300	2	3	Traffic	
	C	(untitled)	5	300	2	3	Traffic	
	D	(untitled)	5	300	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1
	5	E	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	39, 50, 72, 96, 106

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	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	A	111	39	48	1	5
	2	✓	2	B	44	50	6	1	5
	3	✓	3	C	55	72	17	1	5
	4	✓	4	D	77	96	19	1	5
	5	✓	5	E	101	106	5	1	5

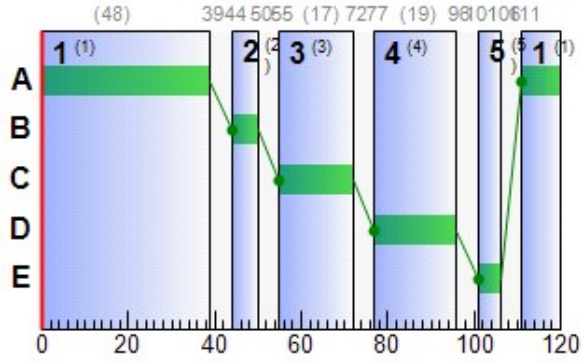
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	111	39	48
	B	1	✓	44	50	6
	C	1	✓	55	72	17
	D	1	✓	77	96	19
	E	1	✓	101	106	5

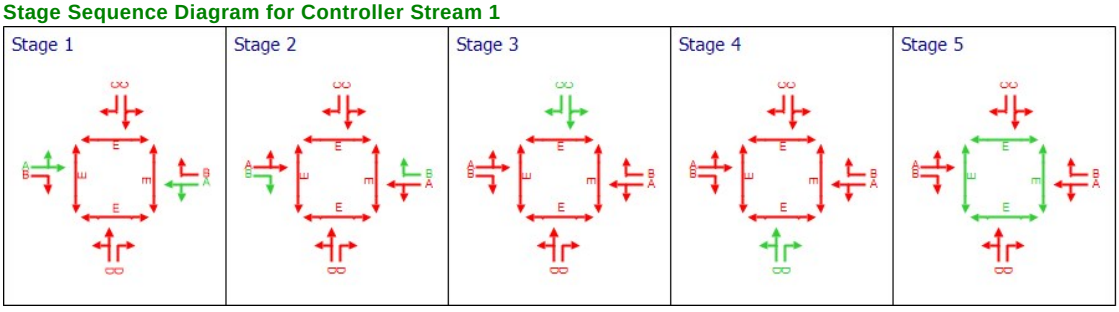
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	111	39	48
A	2	1	1	B	44	50	6
B	1	1	1	D	77	96	19
B	2	1	1	D	77	96	19
C	1	1	1	A	111	39	48
C	2	1	1	B	44	50	6
D	1	1	1	C	55	72	17
D	2	1	1	C	55	72	17

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)
08:00-09:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Calculated capacity (PCU/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	A	566	2038	48	849	67	35	32.47	15.75	181.16	38.47
		2		B	71	2140	6	143	50	81	66.32	2.51	28.86	72.32
	Ax	1	(untitled)		884	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.20
	B	1	(untitled)	D	125	2018	19	353	35	154	46.33	3.74	43.04	52.33
		2		D	224	2140	19	375	60	50	52.68	7.28	83.76	58.68
	Bx	1	(untitled)		237	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.53
	C	1	(untitled)	A	536	2053	48	855	63	44	31.14	14.52	166.95	37.14
		2		B	51	2147	6	143	36	153	60.47	1.71	19.70	66.47
	Cx	1	(untitled)		569	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.51
	D	1	(untitled)	C	194	1997	17	316	61	47	55.96	6.46	74.29	61.96
		2		C	80	2147	17	340	24	282	45.78	2.35	26.99	51.78
	Dx	1	(untitled)		157	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.18

Data Entry - Stage Start and End

Resultant Stage

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	111	39	48	1	5
	2	✓	2	B	44	50	6	1	5
	3	✓	3	C	55	72	17	1	5
	4	✓	4	D	77	96	19	1	5
	5	✓	5	E	101	106	5	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	2	3	Traffic
	B	B	5	300	2	3	Traffic
	C	C	5	300	2	3	Traffic
	D	D	5	300	2	3	Traffic
	E	E	5	5	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Ax	1	✓	135.02	NetworkDefault	0.00	Normal						100	100
B	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2018	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Bx	1	✓	137.76	NetworkDefault	0.00	Normal						100	100
C	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2053	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Cx	1	✓	137.55	NetworkDefault	0.00	Normal						100	100
D	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	1997	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Dx	1	✓	134.83	NetworkDefault	0.00	Normal						100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
08:00-09:00	(ALL)	(ALL)	50	11	5	55.58	1.60

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	67	35	566	2038	48	32.47	15.75	181.16	72.48	5.83	78.32
		2	50	81	71	2140	6	66.32	2.51	28.86	18.57	0.93	19.51
	Ax	1	0	Unrestricted	884	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	35	154	125	2018	19	46.33	3.74	43.04	22.84	1.39	24.24
		2	60	50	224	2140	19	52.68	7.28	83.76	46.54	2.71	49.25
	Bx	1	0	Unrestricted	237	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	63	44	536	2053	48	31.14	14.52	166.95	65.83	5.37	71.21
		2	36	153	51	2147	6	60.47	1.71	19.70	12.16	0.64	12.80
	Cx	1	0	Unrestricted	569	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	61	47	194	1997	17	55.96	6.46	74.29	42.82	2.40	45.23
		2	24	282	80	2147	17	45.78	2.35	26.99	14.45	0.87	15.32
	Dx	1	0	Unrestricted	157	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	566	566	0		2038	849	67		35	0.00	48
		2	71	71	0		2140	143	50		81	0.00	6
	Ax	1	884	884	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	120
	B	1	125	125	0		2018	353	35		154	0.00	19
		2	224	224	0		2140	375	60		50	0.00	19
	Bx	1	237	237	0		Unrestricted	Unrestricted	0		Unrestricted	0.74	120
	C	1	536	536	0		2053	855	63		44	0.00	48
		2	51	51	0		2147	143	36		153	0.00	6
	Cx	1	569	569	0		Unrestricted	Unrestricted	0		Unrestricted	0.70	120
	D	1	194	194	0		1997	316	61		47	0.00	17
		2	80	80	0		2147	340	24		282	0.00	17
	Dx	1	157	157	0		Unrestricted	Unrestricted	0		Unrestricted	0.89	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	6.00	32.47	4.44	0.66	72.48	82.20	445.65	19.63	5.83
		2	6.00	66.32	1.07	0.24	18.57	104.80	67.34	7.06	0.93
	Ax	1	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	6.00	46.33	1.51	0.10	22.84	88.82	108.14	2.88	1.39
		2	6.00	52.68	2.84	0.44	46.54	96.41	202.98	12.98	2.71
	Bx	1	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6.00	31.14	4.11	0.52	65.83	79.94	412.95	15.55	5.37
		2	6.00	60.47	0.76	0.10	12.16	99.68	47.95	2.89	0.64
	Cx	1	16.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	6.00	55.96	2.54	0.48	42.82	98.77	177.53	14.09	2.40
		2	6.00	45.78	0.98	0.04	14.45	87.03	68.54	1.08	0.87
	Dx	1	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	15.75	8.70	181.16	1.35	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.51	8.70	28.86	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	23.48	0.00	0.00	0.00	0.00	7.00	0.00	7.00	
	B	1	0.00	3.74	8.70	43.04	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	7.28	8.70	83.76	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	23.96	0.00	0.00	0.00	0.00	35.00	0.00	35.00	
	C	1	0.00	14.52	8.70	166.95	0.97	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.71	8.70	19.70	0.00	0.00	0.00	5.00	0.00	5.00	
	Cx	1	0.00	0.00	23.92	0.00	0.00	0.00	0.00	14.00	0.00	14.00	
	D	1	0.00	6.46	8.70	74.29	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.35	8.70	26.99	0.00	0.00	0.00	0.00	0.00	0.00	
	Dx	1	0.00	0.00	23.45	0.00	0.00	0.00	0.00	50.00	0.00	50.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	28.30	6.05	4.68	38.47
		2	3.55	1.43	2.49	72.32
	Ax	1	119.36	3.98	30.00	16.20
	B	1	6.25	1.82	3.44	52.33
		2	11.20	3.65	3.07	58.68
	Bx	1	32.65	1.09	30.00	16.53
	C	1	26.80	5.53	4.85	37.14
		2	2.55	0.94	2.71	66.47
	Cx	1	78.27	2.61	30.00	16.51
	D	1	9.70	3.34	2.91	61.96
		2	4.00	1.15	3.48	51.78
	Dx	1	21.17	0.71	30.00	16.18

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (PCU)	Max End of Green Queue EoTS (PCU)	Max End of Red Queue EoTS (PCU)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	15.76	0.66	11.67	1.00	0.00	78.32
		2	0.00	0.00	✓	2.51	0.24	2.45	1.00	0.00	19.51
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	3.74	0.10	3.53	1.00	0.00	24.24
		2	0.00	0.00	✓	7.29	0.44	6.60	1.00	0.00	49.25
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	14.52	0.52	10.95	1.00	0.00	71.21
		2	0.00	0.00	✓	1.71	0.10	1.68	1.00	0.00	12.80
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	1	0.00	0.00	✓	6.46	0.48	5.93	1.00	0.00	45.23
		2	0.00	0.00	✓	2.35	0.04	2.28	1.00	0.00	15.32
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	(ALL)	(ALL)	50	50	0		11000	458	11		725	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	1	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25
	2	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	3	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	4	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	0.00	0.00	1.60	1.00	0.00	10.96

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
7	01/04/2022 13:42:10	01/04/2022 13:42:11	08:00	120	403.56	27.00	66.65	A/1	0	0	A/1	Dx/1	A/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	67	0	3694	660	20.29	295.71	20.15	315.86

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	11	400	40	55.58	87.70	87.70

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	4094	4094	0		67		35	700

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	10.66	23.74	24.43	2.57	383.41	39.26	1531.08	76.16	20.15

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	181.16	0.00	111.00	0.00	111.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	347.19	39.13	8.87

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	403.56

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	53.3	53.3	83.0	0.0	0.0	0.0	0.0
	2	68.3	0.0	78.2	78.5	0.0	0.0	0.0	0.0
	3	55.0	88.5	0.0	55.0	0.0	0.0	0.0	0.0
	4	68.8	68.5	74.9	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	61.3	61.9	0.0
	6	0.0	0.0	0.0	0.0	61.3	0.0	0.0	61.9
	7	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.3
	8	0.0	0.0	0.0	0.0	0.0	61.9	61.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (PCU/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (PCU/hr)	Avg journey time (s)
1	1	2	36		53.32		36	53.32
2	1	3	500		53.34		500	53.34
5	2	3	160		78.16		160	78.16
6	2	4	34		78.49		34	78.49
9	3	4	152		55.00		152	55.00
10	3	1	414		54.97		414	54.97
11	4	2	50		68.51		50	68.51
13	4	1	75		68.84		75	68.84
17	8	7		50		61.25	50	61.25
18	8	6		50		61.92	50	61.92
19	3	2	71		88.50		71	88.50
20	4	3	224		74.88		224	74.88
22	5	7		50		61.92	50	61.92
23	5	6		50		61.25	50	61.25
34	6	8		50		61.92	50	61.92
35	6	5		50		61.25	50	61.25
41	7	8		50		61.25	50	61.25
42	7	5		50		61.92	50	61.92
43	1	4	51		83.00		51	83.00
44	2	1	80		68.29		80	68.29

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)
A	1	(untitled)	1	1	A	566 <	2038	48	0.00	67	35	38.47	32.47	82.20	15.75 +
	2		1	1	B	71	2140	6	0.00	50	81	72.32	66.32	104.80	2.51
Ax	1	(untitled)				884	Unrestricted	120	7.00	0	Unrestricted	16.20	0.00	0.00	0.00
B	1	(untitled)	1	1	D	125	2018	19	0.00	35	154	52.33	46.33	88.82	3.74
	2		1	1	D	224	2140	19	0.00	60	50	58.68	52.68	96.41	7.28
Bx	1	(untitled)				237	Unrestricted	120	35.00	0	Unrestricted	16.53	0.00	0.00	0.00
C	1	(untitled)	1	1	A	536 <	2053	48	0.00	63	44	37.14	31.14	79.94	14.52 +
	2		1	1	B	51	2147	6	5.00	36	153	66.47	60.47	99.68	1.71
Cx	1	(untitled)				569	Unrestricted	120	14.00	0	Unrestricted	16.51	0.00	0.00	0.00
D	1	(untitled)	1	1	C	194	1997	17	0.00	61	47	61.96	55.96	98.77	6.46
	2		1	1	C	80	2147	17	0.00	24	282	51.78	45.78	87.03	2.35
Dx	1	(untitled)				157	Unrestricted	120	50.00	0	Unrestricted	16.18	0.00	0.00	0.00

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0

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	343.79	32.28	10.65	18.25	2.57	295.71	20.15	0.00	315.86
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	347.19	39.13	8.87	24.43	2.57	383.41	20.15	0.00	403.56

- *< = 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 15

Version: 15.5.2.7994

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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Junction 2 - PM.t16
Path: M:\Projects\17\17-144\Design\Traffic\Junction Modelling\MODELLING MAY 2021\Junction 2
Report generation date: 01/04/2022 13:48:51

»A3 - Junction 2 - 2025 + LAP Developments : D3 - 2025 + LAP Developments, PM* :
»A5 - Junction 2 - 2030 + Overall LAP : D5 - 2030 + Overall LAP, PM* :
»A7 - Junction 2 - 2040 + Overall LAP : D7 - 2040 + Overall LAP, PM* :

File summary

File description

File title	(untitled)
Location	
Site number	
UTCRegion	
Driving side	Left
Date	06/12/2011
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	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
			✓		✓		✓	✓					

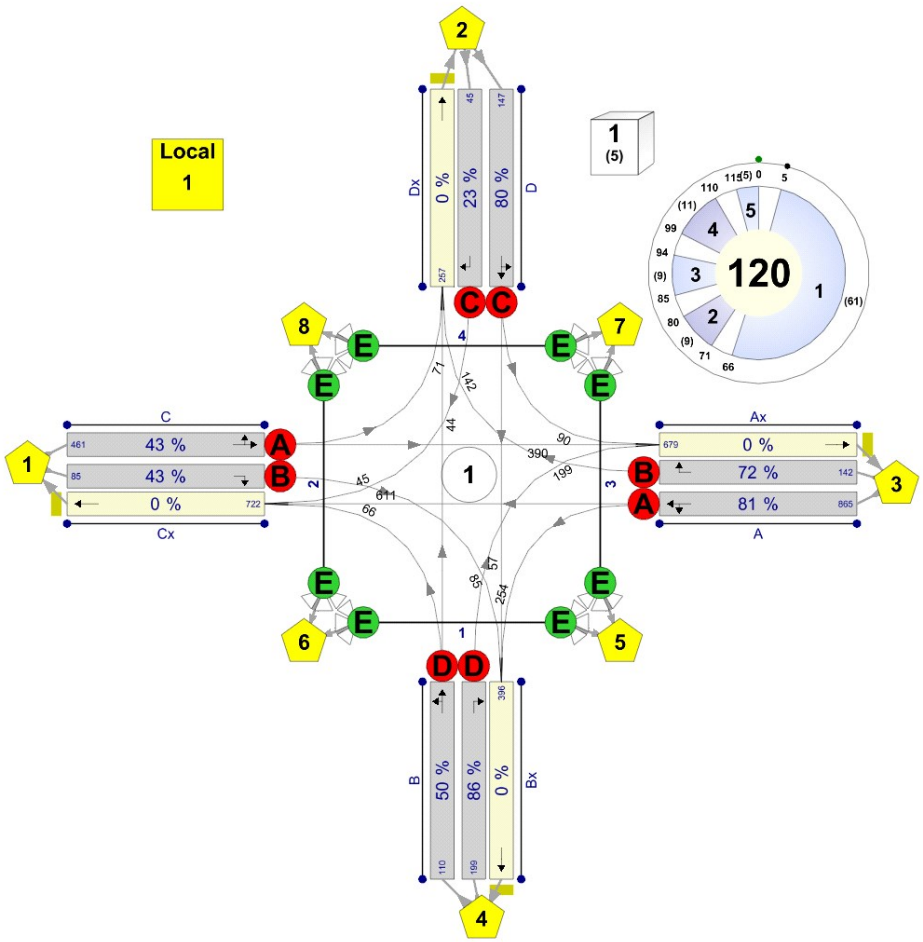
Units

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	✓

Network Diagrams



(untitled)
Diagram produced using TRANSYT 15.5.2.7994

A3 - Junction 2 - 2025 + LAP Developments
D3 - 2025 + LAP Developments, PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:48:33	01/04/2022 13:48:34	17:00	120	254.14	17.05	54.30	A/1	0	0	A/1	Dx/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
Junction 2 - 2025 + LAP Developments		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2025 + LAP Developments, PM				17:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	50.00	✓	Sum of lanes	2052	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Ax	1	(untitled)		✓	135.02						Normal	
B	1	(untitled)		✓	50.00	✓	Sum of lanes	2019	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Bx	1	(untitled)		✓	137.76						Normal	
C	1	(untitled)		✓	50.00	✓	Sum of lanes	2045	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Cx	1	(untitled)		✓	137.55						Normal	
D	1	(untitled)		✓	50.00	✓	Sum of lanes	1993	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Dx	1	(untitled)		✓	134.83						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	9	40.00	✓	2052
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	59	45.00	✓	2019
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	18	40.00	✓	2045
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Cx	1	1	(untitled)											
D	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	88	40.00	✓	1993
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Dx	1	1	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	585	585
	2	142	142
Ax	1	451	451
B	1	17	17
	2	30	30
Bx	1	81	81
C	1	402	402
	2	17	17
Cx	1	588	588
D	1	102	102
	2	45	45
Dx	1	220	220

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
	2	1	B	
B	1	1	D	
	2	1	D	
C	1	1	A	
	2	1	B	
D	1	1	C	
	2	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
(ALL)	(ALL)	6.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	16.20	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	16.53	30.00	✓	Nearside	40.00
Cx	1	1	A/1	Cx/1	16.51	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	16.18	30.00	✓	Nearside	40.00
Ax	1	2	D/1	Ax/1	16.20	30.00	✓	Nearside	40.00
Bx	1	2	D/1	Bx/1	16.53	30.00	✓	Straight	Straight Movement
Cx	1	2	B/1	Cx/1	16.51	30.00	✓	Nearside	45.00
Dx	1	2	B/1	Dx/1	16.18	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	16.20	30.00	✓	Offside	47.00
Bx	1	3	C/2	Bx/1	16.53	30.00	✓	Offside	52.00
Cx	1	3	D/2	Cx/1	16.51	30.00	✓	Offside	52.00
Dx	1	3	A/2	Dx/1	16.18	30.00	✓	Offside	47.00

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	71	331	17	0	0	0	0
	2	45	0	90	12	0	0	0	0
	3	533	142	0	52	0	0	0	0
	4	10	7	30	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	D/1, D/2	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C/1, Dx/1	Normal	71
	2		1	3	C/1, Ax/1	Normal	331
	5		2	3	D/1, Ax/1	Normal	90
	6		2	4	D/1, Bx/1	Normal	12
	9		3	4	A/1, Bx/1	Normal	52
	10		3	1	A/1, Cx/1	Normal	533
	11		4	2	B/1, Dx/1	Normal	7
	13		4	1	B/1, Cx/1	Normal	10
	19		3	2	A/2, Dx/1	Normal	142
	20		4	3	B/2, Ax/1	Normal	30
	43		1	4	C/2, Bx/1	Normal	17
	44		2	1	D/2, Cx/1	Normal	45

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	60	63	2	3	Traffic	
	B	(untitled)	5	300	2	3	Traffic	
	C	(untitled)	5	300	2	3	Traffic	
	D	(untitled)	5	300	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1
	5	E	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	66, 84, 100, 110, 0

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	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	A	5	66	61	1	60
	2	✓	2	B	71	84	13	1	5
	3	✓	3	C	89	100	11	1	5
	4	✓	4	D	105	110	5	1	5
	5	✓	5	E	115	0	5	1	5

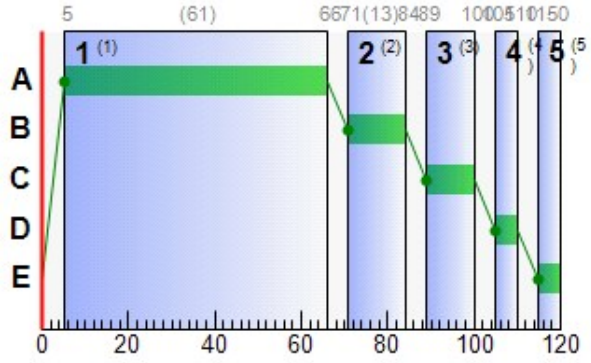
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	5	66	61
	B	1	✓	71	84	13
	C	1	✓	89	100	11
	D	1	✓	105	110	5
	E	1	✓	115	0	5

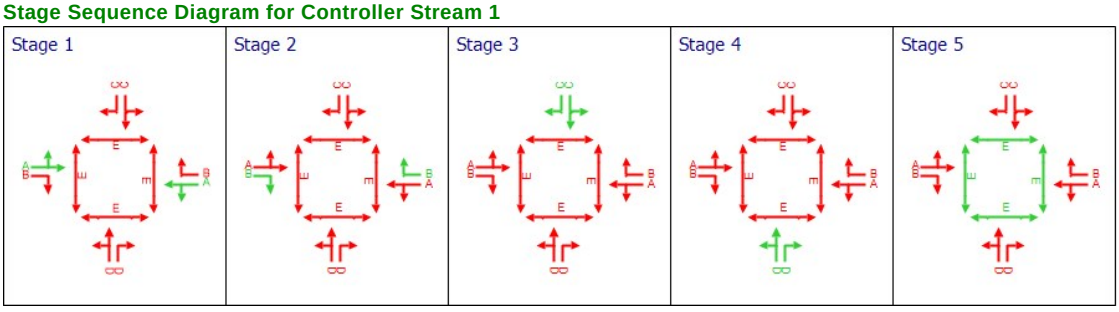
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	5	66	61
A	2	1	1	B	71	84	13
B	1	1	1	D	105	110	5
B	2	1	1	D	105	110	5
C	1	1	1	A	5	66	61
C	2	1	1	B	71	84	13
D	1	1	1	C	89	100	11
D	2	1	1	C	89	100	11

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)
17:00-18:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Calculated capacity (PCU/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	JourneyTime (s)
17:00-18:00	A	1	(untitled)	A	585	2052	61	1077	54	66	20.92	13.16	151.33	26.92
		2		B	142	2140	13	268	53	70	56.73	4.71	54.21	62.73
	Ax	1	(untitled)		451	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.20
	B	1	(untitled)	D	17	2019	5	118	14	524	56.25	0.55	6.28	62.25
		2		D	30	2140	5	125	24	275	58.57	0.99	11.36	64.57
	Bx	1	(untitled)		81	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.53
	C	1	(untitled)	A	402	2045	61	1074	37	140	17.85	7.93	91.18	23.85
		2		B	17	2147	13	268	6	1321	46.83	0.50	5.73	52.83
	Cx	1	(untitled)		588	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.51
	D	1	(untitled)	C	102	1993	11	216	47	91	57.67	3.38	38.90	63.67
		2		C	45	2147	11	233	19	365	50.62	1.39	15.94	56.62
	Dx	1	(untitled)		220	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.18

Data Entry - Stage Start and End

Resultant Stage

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	5	66	61	1	60
	2	✓	2	B	71	84	13	1	5
	3	✓	3	C	89	100	11	1	5
	4	✓	4	D	105	110	5	1	5
	5	✓	5	E	115	0	5	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	60	63	2	3	Traffic
	B	B	5	300	2	3	Traffic
	C	C	5	300	2	3	Traffic
	D	D	5	300	2	3	Traffic
	E	E	5	5	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2052	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Ax	1	✓	135.02	NetworkDefault	0.00	Normal						100	100
B	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2019	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Bx	1	✓	137.76	NetworkDefault	0.00	Normal						100	100
C	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2045	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Cx	1	✓	137.55	NetworkDefault	0.00	Normal						100	100
D	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	1993	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Dx	1	✓	134.83	NetworkDefault	0.00	Normal						100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
17:00-18:00	(ALL)	(ALL)	50	11	5	55.58	1.60

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	54	66	585	2052	61	20.92	13.16	151.33	48.26	4.85	53.11
		2	53	70	142	2140	13	56.73	4.71	54.21	31.78	1.75	33.53
	Ax	1	0	Unrestricted	451	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	14	524	17	2019	5	56.25	0.55	6.28	3.77	0.20	3.97
		2	24	275	30	2140	5	58.57	0.99	11.36	6.93	0.37	7.30
	Bx	1	0	Unrestricted	81	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	37	140	402	2045	61	17.85	7.93	91.18	28.31	2.93	31.24
		2	6	1321	17	2147	13	46.83	0.50	5.73	3.14	0.19	3.33
	Cx	1	0	Unrestricted	588	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	47	91	102	1993	11	57.67	3.38	38.90	23.20	1.26	24.46
		2	19	365	45	2147	11	50.62	1.39	15.94	8.98	0.52	9.50
	Dx	1	0	Unrestricted	220	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	585	585	0		2052	1077	54		66	0.00	61
		2	142	142	0		2140	268	53		70	0.00	13
	Ax	1	451	451	0		Unrestricted	Unrestricted	0		Unrestricted	0.67	120
	B	1	17	17	0		2019	118	14		524	0.00	5
		2	30	30	0		2140	125	24		275	0.00	5
	Bx	1	81	81	0		Unrestricted	Unrestricted	0		Unrestricted	0.63	120
	C	1	402	402	0		2045	1074	37		140	0.00	61
		2	17	17	0		2147	268	6		1321	0.00	13
	Cx	1	588	588	0		Unrestricted	Unrestricted	0		Unrestricted	0.74	120
	D	1	102	102	0		1993	216	47		91	0.00	11
		2	45	45	0		2147	233	19		365	0.00	11
	Dx	1	220	220	0		Unrestricted	Unrestricted	0		Unrestricted	0.98	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	6.00	20.92	3.08	0.32	48.26	66.12	377.21	9.61	4.85
		2	6.00	56.73	1.94	0.30	31.78	98.49	131.10	8.75	1.75
	Ax	1	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	6.00	56.25	0.25	0.01	3.77	95.31	15.84	0.36	0.20
		2	6.00	58.57	0.45	0.04	6.93	97.76	28.20	1.12	0.37
	Bx	1	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6.00	17.85	1.88	0.11	28.31	58.07	230.09	3.35	2.93
		2	6.00	46.83	0.22	0.00	3.14	86.89	14.71	0.06	0.19
	Cx	1	16.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	6.00	57.67	1.42	0.21	23.20	98.40	94.19	6.18	1.26
		2	6.00	50.62	0.61	0.02	8.98	91.39	40.43	0.69	0.52
	Dx	1	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	13.16	8.70	151.33	0.53	0.00	0.00	0.00	0.00	0.00	
		2	0.00	4.71	8.70	54.21	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	23.48	0.00	0.00	0.00	0.00	19.00	0.00	19.00	
	B	1	0.00	0.55	8.70	6.28	0.00	0.00	0.00	6.00	0.00	6.00	
		2	0.00	0.99	8.70	11.36	0.00	0.00	0.00	5.00	0.00	5.00	
	Bx	1	0.00	0.00	23.96	0.00	0.00	0.00	0.00	65.00	0.00	65.00	
	C	1	0.00	7.93	8.70	91.18	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	0.50	8.70	5.73	0.00	0.00	0.00	14.00	0.00	14.00	
	Cx	1	0.00	0.00	23.92	0.00	0.00	0.00	0.00	22.00	0.00	22.00	
	D	1	0.00	3.38	8.70	38.90	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.39	8.70	15.94	0.00	0.00	0.00	10.00	0.00	10.00	
	Dx	1	0.00	0.00	23.45	0.00	0.00	0.00	0.00	26.00	0.00	26.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	A	1	29.25	4.37	6.69	26.92
		2	7.10	2.47	2.87	62.73
	Ax	1	60.89	2.03	30.00	16.20
	B	1	0.85	0.29	2.89	62.25
		2	1.50	0.54	2.79	64.57
	Bx	1	11.16	0.37	30.00	16.53
	C	1	20.10	2.66	7.55	23.85
		2	0.85	0.25	3.41	52.83
	Cx	1	80.88	2.70	30.00	16.51
	D	1	5.10	1.80	2.83	63.67
		2	2.25	0.71	3.18	56.62
	Dx	1	29.66	0.99	30.00	16.18

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (PCU)	Max End of Green Queue EoTS (PCU)	Max End of Red Queue EoTS (PCU)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0.00	0.00	✓	13.16	0.32	9.58	1.00	0.00	53.11
		2	0.00	0.00	✓	4.72	0.30	4.44	1.00	0.00	33.53
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	0.55	0.01	0.55	1.00	0.00	3.97
		2	0.00	0.00	✓	0.99	0.04	0.98	1.00	0.00	7.30
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	7.93	0.11	6.48	1.00	0.00	31.24
		2	0.00	0.00	✓	0.50	0.00	0.50	1.00	0.00	3.33
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	1	0.00	0.00	✓	3.38	0.21	3.24	1.00	0.00	24.46
		2	0.00	0.00	✓	1.39	0.02	1.36	1.00	0.00	9.50
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	(ALL)	(ALL)	50	50	0		11000	458	11		725	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	1	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25
	2	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	3	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	4	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	0.00	0.00	1.60	1.00	0.00	10.96

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:48:33	01/04/2022 13:48:34	17:00	120	254.14	17.05	54.30	A/1	0	0	A/1	Dx/1	A/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	54	0	2680	660	14.60	154.38	12.06	166.44

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	11	400	40	55.58	87.70	87.70

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	3080	3080	0		54		66	700

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	10.50	19.93	16.03	1.01	242.08	31.23	931.78	30.13	12.06

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	151.33	0.00	167.00	0.00	167.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
17:00-18:00	252.99	26.03	9.72

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	0.00	0.00	✓	1.00	0.00	0.00	254.14

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	40.0	40.1	69.4	0.0	0.0	0.0	0.0
	2	73.1	0.0	79.9	80.2	0.0	0.0	0.0	0.0
	3	43.4	78.9	0.0	43.4	0.0	0.0	0.0	0.0
	4	78.8	78.4	80.8	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	61.3	61.9	0.0
	6	0.0	0.0	0.0	0.0	61.3	0.0	0.0	61.9
	7	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.3
	8	0.0	0.0	0.0	0.0	0.0	61.9	61.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (PCU/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (PCU/hr)	Avg journey time (s)
1	1	2	71		40.03		71	40.03
2	1	3	331		40.06		331	40.06
5	2	3	90		79.87		90	79.87
6	2	4	12		80.20		12	80.20
9	3	4	52		43.45		52	43.45
10	3	1	533		43.42		533	43.42
11	4	2	7		78.43		7	78.43
13	4	1	10		78.75		10	78.75
17	8	7		50		61.25	50	61.25
18	8	6		50		61.92	50	61.92
19	3	2	142		78.91		142	78.91
20	4	3	30		80.77		30	80.77
22	5	7		50		61.92	50	61.92
23	5	6		50		61.25	50	61.25
34	6	8		50		61.92	50	61.92
35	6	5		50		61.25	50	61.25
41	7	8		50		61.25	50	61.25
42	7	5		50		61.92	50	61.92
43	1	4	17		69.36		17	69.36
44	2	1	45		73.12		45	73.12

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)
A	1	(untitled)	1	1	A	585 <	2052	61	0.00	54	66	26.92	20.92	66.12	13.16 +
	2		1	1	B	142	2140	13	0.00	53	70	62.73	56.73	98.49	4.71
Ax	1	(untitled)				451	Unrestricted	120	19.00	0	Unrestricted	16.20	0.00	0.00	0.00
B	1	(untitled)	1	1	D	17	2019	5	6.00	14	524	62.25	56.25	95.31	0.55
	2		1	1	D	30	2140	5	5.00	24	275	64.57	58.57	97.76	0.99
Bx	1	(untitled)				81	Unrestricted	120	65.00	0	Unrestricted	16.53	0.00	0.00	0.00
C	1	(untitled)	1	1	A	402	2045	61	0.00	37	140	23.85	17.85	58.07	7.93
	2		1	1	B	17	2147	13	14.00	6	1321	52.83	46.83	86.89	0.50
Cx	1	(untitled)				588	Unrestricted	120	22.00	0	Unrestricted	16.51	0.00	0.00	0.00
D	1	(untitled)	1	1	C	102	1993	11	0.00	47	91	63.67	57.67	98.40	3.38
	2		1	1	C	45	2147	11	10.00	19	365	56.62	50.62	91.39	1.39
Dx	1	(untitled)				220	Unrestricted	120	26.00	0	Unrestricted	16.18	0.00	0.00	0.00

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0

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	249.59	19.19	13.01	9.86	1.01	154.38	12.06	0.00	166.44
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	252.99	26.03	9.72	16.03	1.01	242.08	12.06	0.00	254.14

- *< = 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***

A5 - Junction 2 - 2030 + Overall LAP
D5 - 2030 + Overall LAP, PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
5	01/04/2022 13:48:34	01/04/2022 13:48:35	17:00	120	462.39	30.96	85.84	B/2	0	0	B/2	Dx/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
Junction 2 - 2030 + Overall LAP		D5	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2030 + Overall LAP, PM				17:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	50.00	✓	Sum of lanes	2036	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Ax	1	(untitled)		✓	135.02						Normal	
B	1	(untitled)		✓	50.00	✓	Sum of lanes	2018	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Bx	1	(untitled)		✓	137.76						Normal	
C	1	(untitled)		✓	50.00	✓	Sum of lanes	2047	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Cx	1	(untitled)		✓	137.55						Normal	
D	1	(untitled)		✓	50.00	✓	Sum of lanes	2012	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Dx	1	(untitled)		✓	134.83						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	30	40.00	✓	2036
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	60	45.00	✓	2018
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	16	40.00	✓	2047
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Cx	1	1	(untitled)											
D	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	61	40.00	✓	2012
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Dx	1	1	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	846	846
	2	142	142
Ax	1	673	673
B	1	110	110
	2	199	199
Bx	1	396	396
C	1	455	455
	2	85	85
Cx	1	703	703
D	1	147	147
	2	45	45
Dx	1	257	257

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
	2	1	B	
B	1	1	D	
	2	1	D	
C	1	1	A	
	2	1	B	
D	1	1	C	
	2	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
(ALL)	(ALL)	6.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	16.20	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	16.53	30.00	✓	Nearside	40.00
Cx	1	1	A/1	Cx/1	16.51	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	16.18	30.00	✓	Nearside	40.00
Ax	1	2	D/1	Ax/1	16.20	30.00	✓	Nearside	40.00
Bx	1	2	D/1	Bx/1	16.53	30.00	✓	Straight	Straight Movement
Cx	1	2	B/1	Cx/1	16.51	30.00	✓	Nearside	45.00
Dx	1	2	B/1	Dx/1	16.18	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	16.20	30.00	✓	Offside	47.00
Bx	1	3	C/2	Bx/1	16.53	30.00	✓	Offside	52.00
Cx	1	3	D/2	Cx/1	16.51	30.00	✓	Offside	52.00
Dx	1	3	A/2	Dx/1	16.18	30.00	✓	Offside	47.00

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	71	384	85	0	0	0	0
	2	45	0	90	57	0	0	0	0
	3	592	142	0	254	0	0	0	0
	4	66	44	199	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	D/1, D/2	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C/1, Dx/1	Normal	71
	2		1	3	C/1, Ax/1	Normal	384
	5		2	3	D/1, Ax/1	Normal	90
	6		2	4	D/1, Bx/1	Normal	57
	9		3	4	A/1, Bx/1	Normal	254
	10		3	1	A/1, Cx/1	Normal	592
	11		4	2	B/1, Dx/1	Normal	44
	13		4	1	B/1, Cx/1	Normal	66
	19		3	2	A/2, Dx/1	Normal	142
	20		4	3	B/2, Ax/1	Normal	199
	43		1	4	C/2, Bx/1	Normal	85
	44		2	1	D/2, Cx/1	Normal	45

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	60	63	2	3	Traffic	
	B	(untitled)	5	300	2	3	Traffic	
	C	(untitled)	5	300	2	3	Traffic	
	D	(untitled)	5	300	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1
	5	E	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	66, 80, 94, 110, 0

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	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	A	5	66	61	1	60
	2	✓	2	B	71	80	9	1	5
	3	✓	3	C	85	94	9	1	5
	4	✓	4	D	99	110	11	1	5
	5	✓	5	E	115	0	5	1	5

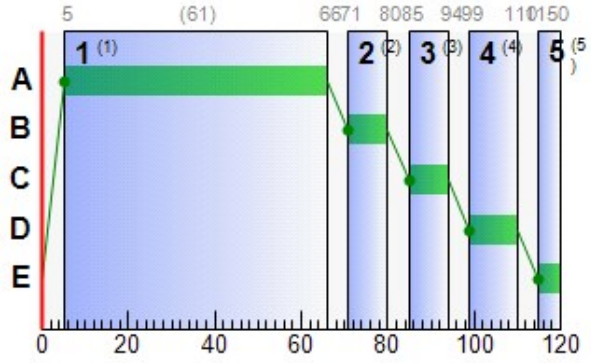
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	5	66	61
	B	1	✓	71	80	9
	C	1	✓	85	94	9
	D	1	✓	99	110	11
	E	1	✓	115	0	5

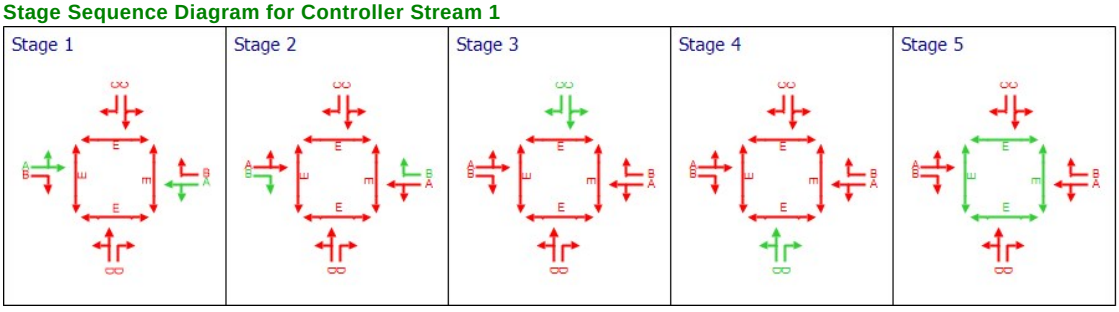
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	5	66	61
A	2	1	1	B	71	80	9
B	1	1	1	D	99	110	11
B	2	1	1	D	99	110	11
C	1	1	1	A	5	66	61
C	2	1	1	B	71	80	9
D	1	1	1	C	85	94	9
D	2	1	1	C	85	94	9

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)
17:00-18:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Calculated capacity (PCU/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	JourneyTime (s)
17:00-18:00	A	1	(untitled)	A	846	2036	61	1069	79	14	29.43	24.27	279.07	35.43
		2		B	142	2140	9	196	72	24	75.73	5.47	62.92	81.73
	Ax	1	(untitled)		673	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.20
	B	1	(untitled)	D	110	2018	11	219	50	79	58.69	3.70	42.60	64.69
		2		D	199	2140	11	232	86	5	92.29	8.66	99.61	98.29
	Bx	1	(untitled)		396	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.53
	C	1	(untitled)	A	455	2047	61	1075	42	113	18.64	9.38	107.89	24.64
		2		B	85	2147	9	197	43	108	58.45	2.83	32.55	64.45
	Cx	1	(untitled)		703	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.51
	D	1	(untitled)	C	147	2012	9	184	80	13	87.73	6.18	71.05	93.73
		2		C	45	2147	9	197	23	294	53.31	1.42	16.34	59.31
	Dx	1	(untitled)		257	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.18

Data Entry - Stage Start and End

Resultant Stage

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	5	66	61	1	60
	2	✓	2	B	71	80	9	1	5
	3	✓	3	C	85	94	9	1	5
	4	✓	4	D	99	110	11	1	5
	5	✓	5	E	115	0	5	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	60	63	2	3	Traffic
	B	B	5	300	2	3	Traffic
	C	C	5	300	2	3	Traffic
	D	D	5	300	2	3	Traffic
	E	E	5	5	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2036	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Ax	1	✓	135.02	NetworkDefault	0.00	Normal						100	100
B	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2018	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Bx	1	✓	137.76	NetworkDefault	0.00	Normal						100	100
C	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2047	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Cx	1	✓	137.55	NetworkDefault	0.00	Normal						100	100
D	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2012	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Dx	1	✓	134.83	NetworkDefault	0.00	Normal						100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
17:00-18:00	(ALL)	(ALL)	50	11	5	55.58	1.60

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	79	14	846	2036	61	29.43	24.27	279.07	98.20	8.92	107.12
		2	72	24	142	2140	9	75.73	5.47	62.92	42.42	2.02	44.44
	Ax	1	0	Unrestricted	673	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	50	79	110	2018	11	58.69	3.70	42.60	25.46	1.38	26.84
		2	86	5	199	2140	11	92.29	8.66	99.61	72.45	3.17	75.62
	Bx	1	0	Unrestricted	396	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	42	113	455	2047	61	18.64	9.38	107.89	33.45	3.45	36.89
		2	43	108	85	2147	9	58.45	2.83	32.55	19.60	1.05	20.65
	Cx	1	0	Unrestricted	703	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	80	13	147	2012	9	87.73	6.18	71.05	50.87	2.27	53.14
		2	23	294	45	2147	9	53.31	1.42	16.34	9.46	0.53	9.99
	Dx	1	0	Unrestricted	257	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	846	846	0		2036	1069	79		14	0.00	61
		2	142	142	0		2140	196	72		24	0.00	9
	Ax	1	673	673	0		Unrestricted	Unrestricted	0		Unrestricted	0.63	120
	B	1	110	110	0		2018	219	50		79	0.00	11
		2	199	199	0		2140	232	86		5	0.00	11
	Bx	1	396	396	0		Unrestricted	Unrestricted	0		Unrestricted	0.55	120
	C	1	455	455	0		2047	1075	42		113	0.00	61
		2	85	85	0		2147	197	43		108	0.00	9
	Cx	1	703	703	0		Unrestricted	Unrestricted	0		Unrestricted	0.62	120
	D	1	147	147	0		2012	184	80		13	0.00	9
		2	45	45	0		2147	197	23		294	0.00	9
	Dx	1	257	257	0		Unrestricted	Unrestricted	0		Unrestricted	0.86	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	6.00	29.43	5.44	1.47	98.20	84.05	667.50	43.59	8.92
		2	6.00	75.73	2.09	0.90	42.42	113.73	135.87	25.63	2.02
	Ax	1	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	6.00	58.69	1.54	0.25	25.46	99.76	102.32	7.41	1.38
		2	6.00	92.29	2.91	2.19	72.45	127.01	192.06	60.68	3.17
	Bx	1	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6.00	18.64	2.20	0.16	33.45	60.41	270.22	4.64	3.45
		2	6.00	58.45	1.22	0.16	19.60	98.83	79.20	4.80	1.05
	Cx	1	16.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	6.00	87.73	2.18	1.40	50.87	123.15	141.86	39.16	2.27
		2	6.00	53.31	0.63	0.03	9.46	93.75	41.18	1.01	0.53
	Dx	1	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	24.27	8.70	279.07	4.36	0.00	0.00	0.00	0.00	0.00	
		2	0.00	5.47	8.70	62.92	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	23.48	0.00	0.00	0.00	0.00	8.00	0.00	8.00	
	B	1	0.00	3.70	8.70	42.60	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	8.66	8.70	99.61	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	23.96	0.00	0.00	0.00	0.00	19.00	0.00	19.00	
	C	1	0.00	9.38	8.70	107.89	0.02	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.83	8.70	32.55	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	23.92	0.00	0.00	0.00	0.00	12.00	0.00	12.00	
	D	1	0.00	6.18	8.70	71.05	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.42	8.70	16.34	0.00	0.00	0.00	8.00	0.00	8.00	
	Dx	1	0.00	0.00	23.45	0.00	0.00	0.00	0.00	15.00	0.00	15.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	A	1	42.30	8.33	5.08	35.43
		2	7.10	3.22	2.20	81.73
	Ax	1	90.87	3.03	30.00	16.20
	B	1	5.50	1.98	2.78	64.69
		2	9.95	5.43	1.83	98.29
	Bx	1	54.55	1.82	30.00	16.53
	C	1	22.75	3.11	7.31	24.64
		2	4.25	1.52	2.79	64.45
	Cx	1	96.70	3.22	30.00	16.51
	D	1	7.35	3.83	1.92	93.73
		2	2.25	0.74	3.03	59.31
	Dx	1	34.65	1.16	30.00	16.18

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (PCU)	Max End of Green Queue EoTS (PCU)	Max End of Red Queue EoTS (PCU)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0.00	0.00	✓	24.28	1.49	14.88	1.00	0.00	107.12
		2	0.00	0.00	✓	5.50	0.92	5.22	1.00	0.00	44.44
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	3.71	0.25	3.52	1.00	0.00	26.84
		2	0.00	0.00	✓	8.84	2.37	8.28	1.00	0.00	75.62
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	9.38	0.16	7.36	1.00	0.00	36.89
		2	0.00	0.00	✓	2.83	0.16	2.74	1.00	0.00	20.65
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	1	0.00	0.00	✓	6.25	1.48	5.93	1.00	0.00	53.14
		2	0.00	0.00	✓	1.42	0.03	1.40	1.00	0.00	9.99
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	(ALL)	(ALL)	50	50	0		11000	458	11		725	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	1	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25
	2	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	3	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	4	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	0.00	0.00	1.60	1.00	0.00	10.96

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
5	01/04/2022 13:48:34	01/04/2022 13:48:35	17:00	120	462.39	30.96	85.84	B/2	0	0	B/2	Dx/1	B/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	86	0	4058	660	21.99	351.91	22.78	374.69

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	11	400	40	55.58	87.70	87.70

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	4458	4458	0		86		5	700

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	10.72	25.00	24.39	6.57	439.60	40.76	1630.22	186.93	22.78

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	279.07	0.00	62.00	0.00	62.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
17:00-18:00	381.62	44.23	8.63

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	0.00	0.00	✓	1.00	0.00	0.00	462.39

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	40.8	40.8	81.0	0.0	0.0	0.0	0.0
	2	75.8	0.0	109.9	110.3	0.0	0.0	0.0	0.0
	3	51.9	97.9	0.0	52.0	0.0	0.0	0.0	0.0
	4	81.2	80.9	114.5	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	61.3	61.9	0.0
	6	0.0	0.0	0.0	0.0	61.3	0.0	0.0	61.9
	7	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.3
	8	0.0	0.0	0.0	0.0	0.0	61.9	61.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (PCU/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (PCU/hr)	Avg journey time (s)
1	1	2	71		40.82		71	40.82
2	1	3	384		40.84		384	40.84
5	2	3	90		109.93		90	109.93
6	2	4	57		110.26		57	110.26
9	3	4	254		51.96		254	51.96
10	3	1	592		51.93		592	51.93
11	4	2	44		80.87		44	80.87
13	4	1	66		81.19		66	81.19
17	8	7		50		61.25	50	61.25
18	8	6		50		61.92	50	61.92
19	3	2	142		97.92		142	97.92
20	4	3	199		114.50		199	114.50
22	5	7		50		61.92	50	61.92
23	5	6		50		61.25	50	61.25
34	6	8		50		61.92	50	61.92
35	6	5		50		61.25	50	61.25
41	7	8		50		61.25	50	61.25
42	7	5		50		61.92	50	61.92
43	1	4	85		80.98		85	80.98
44	2	1	45		75.81		45	75.81

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)
A	1	(untitled)	1	1	A	846 <	2036	61	0.00	79	14	35.43	29.43	84.05	24.27 +
	2		1	1	B	142	2140	9	0.00	72	24	81.73	75.73	113.73	5.47
Ax	1	(untitled)				673	Unrestricted	120	8.00	0	Unrestricted	16.20	0.00	0.00	0.00
B	1	(untitled)	1	1	D	110	2018	11	0.00	50	79	64.69	58.69	99.76	3.70
	2		1	1	D	199	2140	11	0.00	86	5	98.29	92.29	127.01	8.66
Bx	1	(untitled)				396	Unrestricted	120	19.00	0	Unrestricted	16.53	0.00	0.00	0.00
C	1	(untitled)	1	1	A	455 <	2047	61	0.00	42	113	24.64	18.64	60.41	9.38 +
	2		1	1	B	85	2147	9	0.00	43	108	64.45	58.45	98.83	2.83
Cx	1	(untitled)				703	Unrestricted	120	12.00	0	Unrestricted	16.51	0.00	0.00	0.00
D	1	(untitled)	1	1	C	147	2012	9	0.00	80	13	93.73	87.73	123.15	6.18
	2		1	1	C	45	2147	9	8.00	23	294	59.31	53.31	93.75	1.42
Dx	1	(untitled)				257	Unrestricted	120	15.00	0	Unrestricted	16.18	0.00	0.00	0.00

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0

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	378.22	37.39	10.12	18.22	6.57	351.91	22.78	0.00	374.69
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	381.62	44.23	8.63	24.39	6.57	439.60	22.78	0.00	462.39

- *< = 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***

A7 - Junction 2 - 2040 + Overall LAP
D7 - 2040 + Overall LAP, PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
7	01/04/2022 13:48:35	01/04/2022 13:48:36	17:00	120	469.36	31.42	85.84	B/2	0	0	B/2	Dx/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
Junction 2 - 2040 + Overall LAP		D7	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2040 + Overall LAP, PM				17:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	50.00	✓	Sum of lanes	2036	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Ax	1	(untitled)		✓	135.02						Normal	
B	1	(untitled)		✓	50.00	✓	Sum of lanes	2018	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2140	✓		Normal	
Bx	1	(untitled)		✓	137.76						Normal	
C	1	(untitled)		✓	50.00	✓	Sum of lanes	2047	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Cx	1	(untitled)		✓	137.55						Normal	
D	1	(untitled)		✓	50.00	✓	Sum of lanes	2012	✓		Normal	
	2			✓	50.00	✓	Sum of lanes	2147	✓		Normal	
Dx	1	(untitled)		✓	134.83						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	29	40.00	✓	2036
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	60	45.00	✓	2018
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	47.00		2140
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	15	40.00	✓	2047
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Cx	1	1	(untitled)											
D	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	61	40.00	✓	2012
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	52.00		2147
Dx	1	1	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	865	865
	2	142	142
Ax	1	679	679
B	1	110	110
	2	199	199
Bx	1	396	396
C	1	461	461
	2	85	85
D	1	147	147
	2	45	45
Dx	1	257	257

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
	2	1	B	
B	1	1	D	
	2	1	D	
C	1	1	A	
	2	1	B	
D	1	1	C	
	2	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
(ALL)	(ALL)	6.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	16.20	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	16.53	30.00	✓	Nearside	40.00
Cx	1	1	A/1	Cx/1	16.51	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	16.18	30.00	✓	Nearside	40.00
Ax	1	2	D/1	Ax/1	16.20	30.00	✓	Nearside	40.00
Bx	1	2	D/1	Bx/1	16.53	30.00	✓	Straight	Straight Movement
Cx	1	2	B/1	Cx/1	16.51	30.00	✓	Nearside	45.00
Dx	1	2	B/1	Dx/1	16.18	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	16.20	30.00	✓	Offside	47.00
Bx	1	3	C/2	Bx/1	16.53	30.00	✓	Offside	52.00
Cx	1	3	D/2	Cx/1	16.51	30.00	✓	Offside	52.00
Dx	1	3	A/2	Dx/1	16.18	30.00	✓	Offside	47.00

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	71	390	85	0	0	0	0
	2	45	0	90	57	0	0	0	0
	3	611	142	0	254	0	0	0	0
	4	66	44	199	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (PCU/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	D/1, D/2	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C/1, Dx/1	Normal	71
	2		1	3	C/1, Ax/1	Normal	390
	5		2	3	D/1, Ax/1	Normal	90
	6		2	4	D/1, Bx/1	Normal	57
	9		3	4	A/1, Bx/1	Normal	254
	10		3	1	A/1, Cx/1	Normal	611
	11		4	2	B/1, Dx/1	Normal	44
	13		4	1	B/1, Cx/1	Normal	66
	19		3	2	A/2, Dx/1	Normal	142
	20		4	3	B/2, Ax/1	Normal	199
	43		1	4	C/2, Bx/1	Normal	85
	44		2	1	D/2, Cx/1	Normal	45

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	60	63	2	3	Traffic	
	B	(untitled)	5	300	2	3	Traffic	
	C	(untitled)	5	300	2	3	Traffic	
	D	(untitled)	5	300	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1
	5	E	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	66, 80, 94, 110, 0

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	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	A	5	66	61	1	60
	2	✓	2	B	71	80	9	1	5
	3	✓	3	C	85	94	9	1	5
	4	✓	4	D	99	110	11	1	5
	5	✓	5	E	115	0	5	1	5

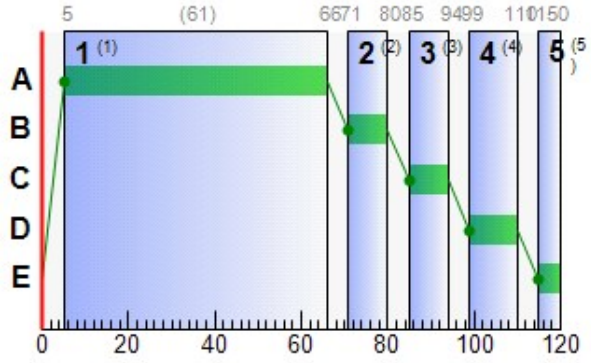
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	5	66	61
	B	1	✓	71	80	9
	C	1	✓	85	94	9
	D	1	✓	99	110	11
	E	1	✓	115	0	5

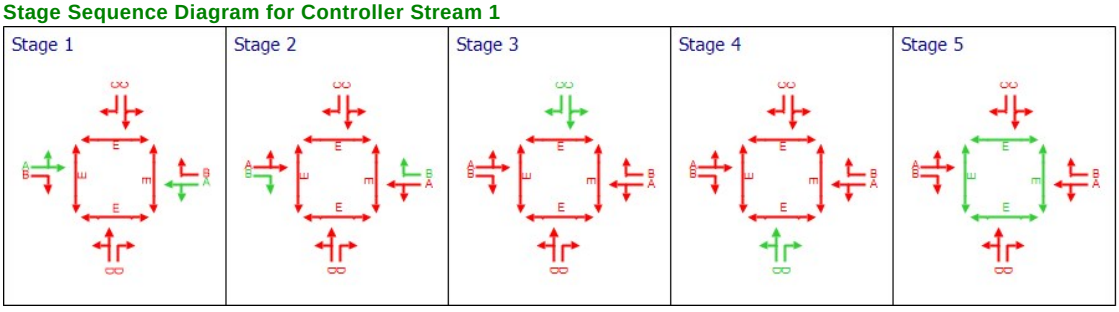
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	5	66	61
A	2	1	1	B	71	80	9
B	1	1	1	D	99	110	11
B	2	1	1	D	99	110	11
C	1	1	1	A	5	66	61
C	2	1	1	B	71	80	9
D	1	1	1	C	85	94	9
D	2	1	1	C	85	94	9

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)
17:00-18:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Calculated capacity (PCU/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	JourneyTime (s)
17:00-18:00	A	1	(untitled)	A	865	2036	61	1069	81	11	30.51	25.46	292.83	36.51
		2		B	142	2140	9	196	72	24	75.73	5.47	62.92	81.73
	Ax	1	(untitled)		679	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.20
	B	1	(untitled)	D	110	2018	11	219	50	79	58.69	3.70	42.60	64.69
		2		D	199	2140	11	232	86	5	92.29	8.66	99.61	98.29
	Bx	1	(untitled)		396	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.53
	C	1	(untitled)	A	461	2047	61	1075	43	110	18.73	9.51	109.35	24.73
		2		B	85	2147	9	197	43	108	58.45	2.83	32.55	64.45
	Cx	1	(untitled)		722	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.51
	D	1	(untitled)	C	147	2012	9	184	80	13	87.73	6.18	71.05	93.73
		2		C	45	2147	9	197	23	294	53.31	1.42	16.34	59.31
	Dx	1	(untitled)		257	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	16.18

Data Entry - Stage Start and End

Resultant Stage

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	5	66	61	1	60
	2	✓	2	B	71	80	9	1	5
	3	✓	3	C	85	94	9	1	5
	4	✓	4	D	99	110	11	1	5
	5	✓	5	E	115	0	5	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	60	63	2	3	Traffic
	B	B	5	300	2	3	Traffic
	C	C	5	300	2	3	Traffic
	D	D	5	300	2	3	Traffic
	E	E	5	5	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2036	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Ax	1	✓	135.02	NetworkDefault	0.00	Normal						100	100
B	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2018	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2140	100	100
Bx	1	✓	137.76	NetworkDefault	0.00	Normal						100	100
C	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2047	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Cx	1	✓	137.55	NetworkDefault	0.00	Normal						100	100
D	1	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2012	100	100
	2	✓	50.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2147	100	100
Dx	1	✓	134.83	NetworkDefault	0.00	Normal						100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
17:00-18:00	(ALL)	(ALL)	50	11	5	55.58	1.60

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	81	11	865	2036	61	30.51	25.46	292.83	104.11	9.31	113.42
		2	72	24	142	2140	9	75.73	5.47	62.92	42.42	2.02	44.44
	Ax	1	0	Unrestricted	679	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	50	79	110	2018	11	58.69	3.70	42.60	25.46	1.38	26.84
		2	86	5	199	2140	11	92.29	8.66	99.61	72.45	3.17	75.62
	Bx	1	0	Unrestricted	396	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	43	110	461	2047	61	18.73	9.51	109.35	34.06	3.50	37.56
		2	43	108	85	2147	9	58.45	2.83	32.55	19.60	1.05	20.65
	Cx	1	0	Unrestricted	722	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	80	13	147	2012	9	87.73	6.18	71.05	50.87	2.27	53.14
		2	23	294	45	2147	9	53.31	1.42	16.34	9.46	0.53	9.99
	Dx	1	0	Unrestricted	257	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow (PCU/hr)	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	865	865	0		2036	1069	81		11	0.00	61
		2	142	142	0		2140	196	72		24	0.00	9
	Ax	1	679	679	0		Unrestricted	Unrestricted	0		Unrestricted	0.63	120
	B	1	110	110	0		2018	219	50		79	0.00	11
		2	199	199	0		2140	232	86		5	0.00	11
	Bx	1	396	396	0		Unrestricted	Unrestricted	0		Unrestricted	0.54	120
	C	1	461	461	0		2047	1075	43		110	0.00	61
		2	85	85	0		2147	197	43		108	0.00	9
	Cx	1	722	722	0		Unrestricted	Unrestricted	0		Unrestricted	0.62	120
	D	1	147	147	0		2012	184	80		13	0.00	9
		2	45	45	0		2147	197	23		294	0.00	9
	Dx	1	257	257	0		Unrestricted	Unrestricted	0		Unrestricted	0.86	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	6.00	30.51	5.66	1.68	104.11	85.84	692.97	49.55	9.31
		2	6.00	75.73	2.09	0.90	42.42	113.73	135.87	25.63	2.02
	Ax	1	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	6.00	58.69	1.54	0.25	25.46	99.76	102.32	7.41	1.38
		2	6.00	92.29	2.91	2.19	72.45	127.01	192.06	60.68	3.17
	Bx	1	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6.00	18.73	2.24	0.16	34.06	60.59	274.53	4.81	3.50
		2	6.00	58.45	1.22	0.16	19.60	98.83	79.20	4.80	1.05
	Cx	1	16.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	6.00	87.73	2.18	1.40	50.87	123.15	141.86	39.16	2.27
		2	6.00	53.31	0.63	0.03	9.46	93.75	41.18	1.01	0.53
	Dx	1	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	25.46	8.70	292.83	4.95	0.00	0.00	0.00	0.00	0.00	
		2	0.00	5.47	8.70	62.92	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	23.48	0.00	0.00	0.00	0.00	8.00	0.00	8.00	
	B	1	0.00	3.70	8.70	42.60	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	8.66	8.70	99.61	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	23.96	0.00	0.00	0.00	0.00	19.00	0.00	19.00	
	C	1	0.00	9.51	8.70	109.35	0.03	0.00	0.00	0.00	0.00	0.00	
		2	0.00	2.83	8.70	32.55	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	23.92	0.00	0.00	0.00	0.00	12.00	0.00	12.00	
	D	1	0.00	6.18	8.70	71.05	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.42	8.70	16.34	0.00	0.00	0.00	8.00	0.00	8.00	
	Dx	1	0.00	0.00	23.45	0.00	0.00	0.00	0.00	15.00	0.00	15.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	A	1	43.25	8.77	4.93	36.51
		2	7.10	3.22	2.20	81.73
	Ax	1	91.68	3.06	30.00	16.20
	B	1	5.50	1.98	2.78	64.69
		2	9.95	5.43	1.83	98.29
	Bx	1	54.55	1.82	30.00	16.53
	C	1	23.05	3.17	7.28	24.73
		2	4.25	1.52	2.79	64.45
	Cx	1	99.31	3.31	30.00	16.51
	D	1	7.35	3.83	1.92	93.73
		2	2.25	0.74	3.03	59.31
	Dx	1	34.65	1.16	30.00	16.18

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (PCU)	Max End of Green Queue EoTS (PCU)	Max End of Red Queue EoTS (PCU)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0.00	0.00	✓	25.48	1.70	15.39	1.00	0.00	113.42
		2	0.00	0.00	✓	5.50	0.92	5.22	1.00	0.00	44.44
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	3.71	0.25	3.52	1.00	0.00	26.84
		2	0.00	0.00	✓	8.84	2.37	8.28	1.00	0.00	75.62
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	9.51	0.16	7.46	1.00	0.00	37.56
		2	0.00	0.00	✓	2.83	0.16	2.74	1.00	0.00	20.65
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	1	0.00	0.00	✓	6.25	1.48	5.93	1.00	0.00	53.14
		2	0.00	0.00	✓	1.42	0.03	1.40	1.00	0.00	9.99
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	(ALL)	(ALL)	50	50	0		11000	458	11		725	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	1	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25
	2	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	3	1	0.45	0.86	0.52	61.92
		2	0.45	0.86	0.52	61.92
	4	1	0.40	0.85	0.47	61.25
		2	0.40	0.85	0.47	61.25

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	0.00	0.00	1.60	1.00	0.00	10.96

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	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 with worst unsignalised PRC	Ite wit wor over PR
7	01/04/2022 13:48:35	01/04/2022 13:48:36	17:00	120	469.36	31.42	85.84	B/2	0	0	B/2	Dx/1	B/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	86	0	4108	660	22.12	358.43	23.23	381.66

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	11	400	40	55.58	87.70	87.70

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	4508	4508	0		86		5	700

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	10.72	25.09	24.64	6.77	446.12	41.11	1659.99	193.06	23.23

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	292.83	0.00	62.00	0.00	62.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
17:00-18:00	386.29	44.85	8.61

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	0.00	0.00	✓	1.00	0.00	0.00	469.36

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	40.9	40.9	81.0	0.0	0.0	0.0	0.0
	2	75.8	0.0	109.9	110.3	0.0	0.0	0.0	0.0
	3	53.0	97.9	0.0	53.0	0.0	0.0	0.0	0.0
	4	81.2	80.9	114.5	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	61.3	61.9	0.0
	6	0.0	0.0	0.0	0.0	61.3	0.0	0.0	61.9
	7	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.3
	8	0.0	0.0	0.0	0.0	0.0	61.9	61.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (PCU/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (PCU/hr)	Avg journey time (s)
1	1	2	71		40.91		71	40.91
2	1	3	390		40.93		390	40.93
5	2	3	90		109.93		90	109.93
6	2	4	57		110.26		57	110.26
9	3	4	254		53.04		254	53.04
10	3	1	611		53.02		611	53.02
11	4	2	44		80.87		44	80.87
13	4	1	66		81.19		66	81.19
17	8	7		50		61.25	50	61.25
18	8	6		50		61.92	50	61.92
19	3	2	142		97.92		142	97.92
20	4	3	199		114.50		199	114.50
22	5	7		50		61.92	50	61.92
23	5	6		50		61.25	50	61.25
34	6	8		50		61.92	50	61.92
35	6	5		50		61.25	50	61.25
41	7	8		50		61.25	50	61.25
42	7	5		50		61.92	50	61.92
43	1	4	85		80.98		85	80.98
44	2	1	45		75.81		45	75.81

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)
A	1	(untitled)	1	1	A	865 <	2036	61	0.00	81	11	36.51	30.51	85.84	25.46 +
	2		1	1	B	142	2140	9	0.00	72	24	81.73	75.73	113.73	5.47
Ax	1	(untitled)				679	Unrestricted	120	8.00	0	Unrestricted	16.20	0.00	0.00	0.00
B	1	(untitled)	1	1	D	110	2018	11	0.00	50	79	64.69	58.69	99.76	3.70
	2		1	1	D	199	2140	11	0.00	86	5	98.29	92.29	127.01	8.66
Bx	1	(untitled)				396	Unrestricted	120	19.00	0	Unrestricted	16.53	0.00	0.00	0.00
C	1	(untitled)	1	1	A	461 <	2047	61	0.00	43	110	24.73	18.73	60.59	9.51 +
	2		1	1	B	85	2147	9	0.00	43	108	64.45	58.45	98.83	2.83
Cx	1	(untitled)				722	Unrestricted	120	12.00	0	Unrestricted	16.51	0.00	0.00	0.00
D	1	(untitled)	1	1	C	147	2012	9	0.00	80	13	93.73	87.73	123.15	6.18
	2		1	1	C	45	2147	9	8.00	23	294	59.31	53.31	93.75	1.42
Dx	1	(untitled)				257	Unrestricted	120	15.00	0	Unrestricted	16.18	0.00	0.00	0.00

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	725	61.25	55.58	1.60	100	0

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	382.89	38.00	10.08	18.47	6.77	358.43	23.23	0.00	381.66
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	386.29	44.85	8.61	24.64	6.77	446.12	23.23	0.00	469.36

- *< = 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 15

Filename: Junction 3 - AM.t16
Path: M:\Projects\17\17-144\Design\Traffic\Junction Modelling\MODELLING MAY 2021\Junction 3
Report generation date: 01/04/2022 13:56:37

»A1 - 2022 : D1 - 2022, AM* :
»A2 - 2025 : D2 - 2025, AM* :
»A3 - 2025 + LAP Developments : D3 - 2025 + LAP Developments, AM* :

File summary

File description

File title	17-144 Oldtown Planning 05
Location	
Site number	
UTCRegion	
Driving side	Left
Date	06/12/2011
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	17-144
Enumerator	DOMAIN\f.silva
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	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
			✓		✓		✓	✓					

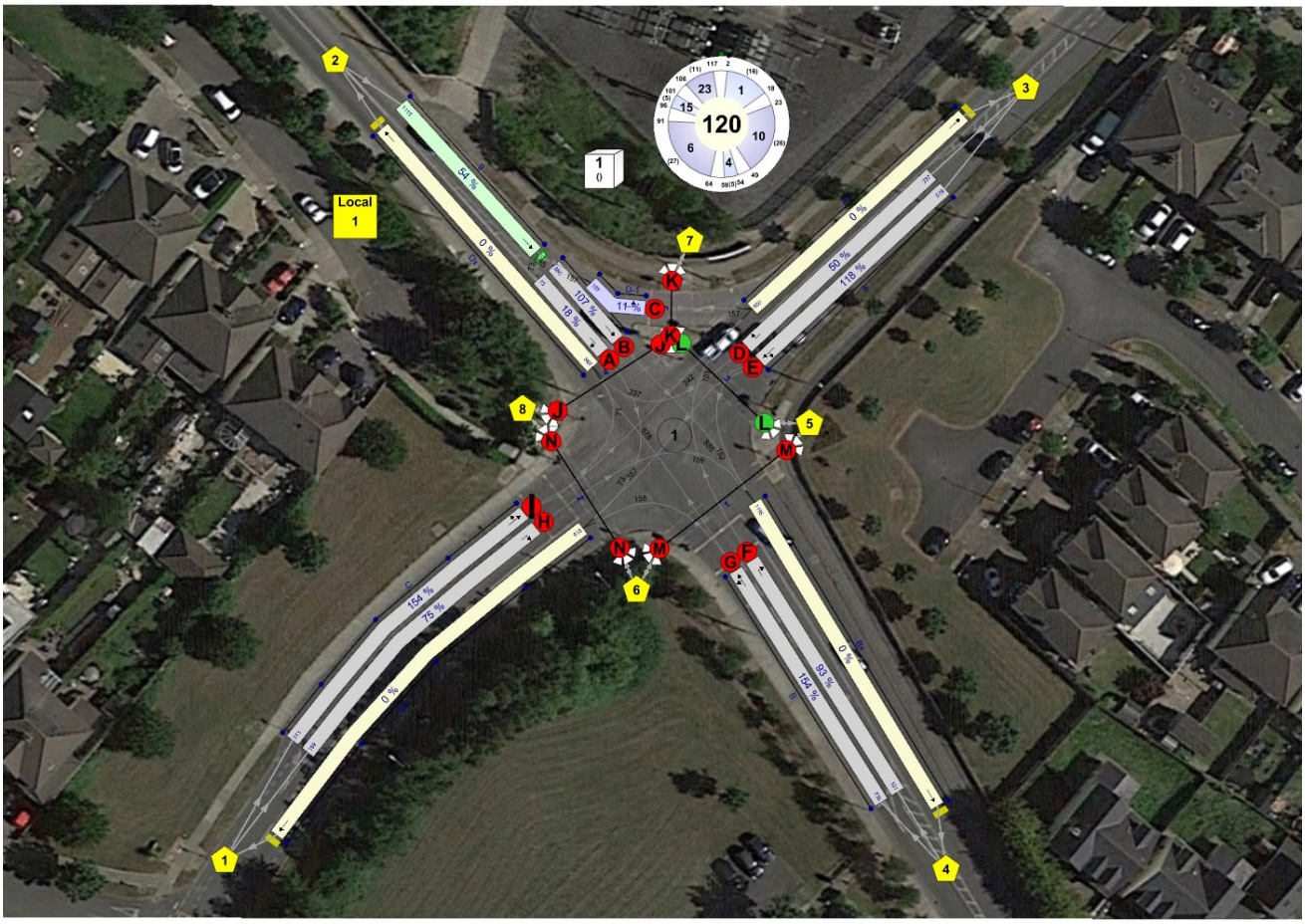
Units

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	Veh	Veh	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	✓

Network Diagrams



17-144 Oldtown Planning 05
Diagram produced using TRANSYT 15.5.2.7994

A1 - 2022
D1 - 2022, AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
1	01/04/2022 13:56:11	01/04/2022 13:56:12	08:00	120	666.42	44.81	96.97	B/1	1	4	B/1	9/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2022		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2022, AM	(untitled)			08:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
D-1	(untitled)		1
9			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	103.69	✓	Sum of lanes	2038			✓		Normal	
	2			✓	103.69	✓	Sum of lanes	2120			✓		Normal	
Ax	1	(untitled)		✓	213.03								Normal	
B	1	(untitled)		✓	112.31	✓	Sum of lanes	2033			✓		Normal	
	2			✓	112.31	✓	Sum of lanes	2163			✓		Normal	
Bx	1	(untitled)		✓	233.82								Normal	
C	1	(untitled)		✓	133.82	✓	Sum of lanes	2038			✓		Normal	
	2			✓	132.01	✓	Sum of lanes	2124			✓		Normal	
Cx	1	(untitled)		✓	266.10								Normal	
D	2	(untitled)			500.00	✓	Sum of lanes	2209			✓		Normal	
	3			✓	51.57	✓	Sum of lanes	2144	✓	1800	✓		Normal	
Dx	1	(untitled)		✓	215.92								Normal	
D-1	1	(untitled)		✓	52.09	✓	Sum of lanes	1990			✓	✓	Normal	
9	1			✓	82.02	✓	Sum of lanes	2059					Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	28	42.06	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	35.52		2120
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	33	39.22	✓	2033
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	70.68		2163
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	18	26.29	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	37.44		2124
Cx	1	1	(untitled)											
D	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00		2209
	3	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	49.21		2144
Dx	1	1	(untitled)											
D-1	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	43.60	✓	1990
9	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00	✓	2059

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
A	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Ax	1	NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Cx	1	NetworkDefault	100	100	100		0.00		
D	2	NetworkDefault	100	100	100		0.00		
	3	Flare	100	100	100		0.00		
Dx	1	NetworkDefault	100	100	100		0.00		
D-1	1	NetworkDefault	100	100	100		0.00		
9	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	459	459
	2	194	194
Ax	1	412	412
B	1	460	460
	2	88	88
Bx	1	758	758
C	1	262	262
	2	153	153
Cx	1	521	521
D	2	478	478
	3	38	38
Dx	1	550	550
D-1	1	109	109
9	1	625	625

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	E	
	2	1	D	
B	1	1	G	
	2	1	F	
C	1	1	I	
	2	1	H	
D	2	1	B	
	3	1	A	
D-1	1	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	12.44	30.00
	2	12.44	30.00
B	1	13.48	30.00
	2	13.48	30.00
C	1	16.06	30.00
	2	15.84	30.00
9	1	9.84	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	25.56	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	28.06	30.00	✓	Nearside	42.06
Cx	1	1	A/1	Cx/1	31.93	30.00	✓	Straight	Straight Movement
D	2	1	9/1	D/2	60.00	30.00	✓	Straight	Straight Movement
	3	1	9/1	D/3	6.19	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	25.91	30.00	✓	Nearside	26.29
D-1	1	1	9/1	D-1/1	6.25	30.00	✓	Straight	Straight Movement
Ax	1	2	D-1/1	Ax/1	25.56	30.00	✓	Nearside	43.60
Bx	1	2	C/2	Bx/1	28.06	30.00	✓	Offside	37.44
Cx	1	2	B/1	Cx/1	31.93	30.00	✓	Nearside	39.22
Dx	1	2	B/1	Dx/1	25.91	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	25.56	30.00	✓	Offside	70.68
Bx	1	3	D/2	Bx/1	28.06	30.00	✓	Straight	Straight Movement
Cx	1	3	D/3	Cx/1	31.93	30.00	✓	Offside	49.21
Dx	1	3	A/2	Dx/1	25.91	30.00	✓	Offside	35.52

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
D-1	1	AllTraffic		

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	18.00	12.00	5.40
2	(untitled)		1		Farside	16.00	10.67	5.40
3	(untitled)		1		Farside	16.00	10.67	5.40
4	(untitled)		1		Farside	15.00	10.00	5.40
5	(untitled)				Farside	6.00	4.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	N	
3	1	L	
4	1	J	
5	1	K	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Pedestrian Crossing Connectors

Pedestrian Crossing Connectors

Pedestrian crossing connector	Pedestrian crossing1	Pedestrian crossing2	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	5:1	3:1	3.00	2.00	5.40
2	5:1	4:2	3.00	2.00	5.40

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	47	215	153	0	0	0	0
	2	38	0	109	478	0	0	0	0
	3	332	194	0	127	0	0	0	0
	4	151	309	88	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	9/1	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	5:2E	5:2X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	47
	2		1	3	C/1, Ax/1	Normal	215
	9		3	4	A/1, Bx/1	Normal	127
	10		3	1	A/1, Cx/1	Normal	332
	11		4	2	B/1, Dx/1	Normal	309
	13		4	1	B/1, Cx/1	Normal	151
	16		2	4	9/1, D/2, Bx/1	Normal	478
	17		2	3	9/1, D-1/1, Ax/1	Normal	109
	19		4	3	B/2, Ax/1	Normal	88
	20		3	2	A/2, Dx/1	Normal	194
	38		1	4	C/2, Bx/1	Normal	153
	39		2	1	9/1, D/3, Cx/1	Normal	38

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	14		7	5	5:2E, 5:1X, 3:1E, 3:2X	Normal	50
	15		7	8	5:2E, 5:1X, 4:2E, 4:1X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	36		8	7	4:1E, 4:2X, 5:1E, 5:2X	Normal	50
	37		5	7	3:2E, 3:1X, 5:1E, 5:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	0	0	Unknown	
	B	(untitled)	5	300	0	0	Unknown	
	C	(untitled)	5	300	0	0	Unknown	
	D	(untitled)	5	300	0	0	Unknown	
	E	(untitled)	22	300	0	0	Unknown	
	F	(untitled)	5	300	0	0	Unknown	
	G	(untitled)	27	27	0	0	Unknown	
	H	(untitled)	5	300	0	0	Unknown	
	I	(untitled)	5	300	0	0	Unknown	
	J	(untitled)	5	300	0	0	Pedestrian	0
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, L	1
	2	A, B, K, L	1
	3	A, C, L, M	1
	4	A, F, K	1
	5	A, K, L, M	1
	6	B, C, G, L	1
	7	B, C, L, N	1
	8	B, G, K, L	1
	9	B, K, L, N	1
	10	C, D, E	1
	11	C, D, H	1
	12	C, D, M, N	1
	13	C, E, J	1
	14	C, H, J, L	1
	15	C, J, L, M, N	1
	16	D, E, K	1
	17	D, H, K	1
	18	D, K, M, N	1
	19	E, I, K	1
	20	E, J, K	1
	21	F, G, K	1
	22	F, J, K, N	1
	23	H, I, K	1
	24	H, J, K, L	1
	25	I, K, M	1
	26	J, K, L, M, N	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 10, 4, 6, 15, 23	13, 48, 59, 91, 101, 3
	2	(untitled)	Single	1, 10, 4, 6, 23, 15	16, 44, 68, 94, 122, 147
	3	(untitled)	Single	1, 10, 4, 6, 23, 26	16, 44, 68, 94, 122, 147
	4	(untitled)	Single	1, 10, 4, 6, 26, 23	16, 44, 68, 94, 120, 149
	5	(untitled)	Single	1, 10, 4, 6, 11, 15, 19	12, 36, 56, 78, 102, 124, 149
	6	(untitled)	Single	1, 10, 4, 6, 11, 15, 23	12, 36, 56, 78, 102, 124, 149
	7	(untitled)	Single	1, 10, 4, 6, 11, 15, 25	12, 36, 56, 78, 102, 124, 147
	8	(untitled)	Single	1, 10, 4, 6, 11, 19, 15	13, 38, 58, 80, 104, 125, 147
	9	(untitled)	Single	1, 10, 4, 6, 11, 19, 26	13, 38, 58, 80, 104, 125, 147
	10	(untitled)	Single	1, 10, 4, 6, 11, 22, 25	12, 36, 56, 78, 101, 124, 147

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5		5	5	5	5				0
	B				5	5	5		5	5	5			0	
	C						5			5		5			
	D	5	5				5	5		5	5		5		
	E	5	5				5	5	5				5	5	0
	F		5	5	5	5			5	5			0	5	
	G	5			5	5			5	5	0			5	5
	H	5	5			5	5	5						0	5
	I	5	5	5	5		5	5			5		0		5
	J	5	5		5			5		5					
	K			5											
	L				5	5	5			5					
	M		5			5	5	5	5						
	N	5				5		5	5	5					

Banned Stage transitions for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1																										
	2																										
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										
	13																										
	14																										
	15																										
	16																										
	17																										
	18																										
	19																										
	20																										
	21																										
	22																										
	23																										
	24																										
	25																										
	26																										

Interstage Matrix for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1	0	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	2	5	0	5	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	3	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	4	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	6	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	7	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	8	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	9	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	11	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	12	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	13	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5
	14	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5
	15	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5
	16	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5
	17	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	18	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	19	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5
	20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5
	21	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5
	22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5
	23	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5
	24	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5
	25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5
	26	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	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	A,B,C,L	8	13	5	1	5
	2	✓	10	C,D,E	18	48	30	1	22
	3	✓	4	A,F,K	53	59	6	1	5
	4	✓	6	B,C,G,L	64	91	27	1	27
	5	✓	15	C,J,L,M,N	96	101	5	1	5
	6	✓	23	H,I,K	106	3	17	1	5

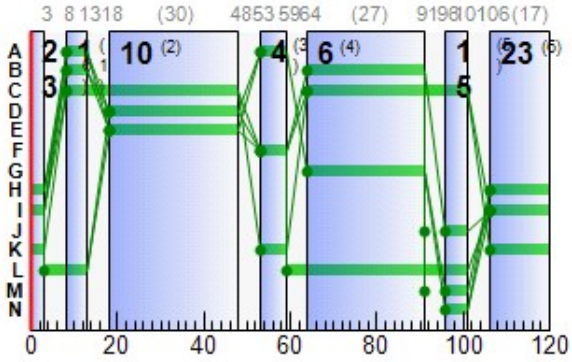
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	53	59	6
		2	✓	8	13	5
	B	1	✓	64	91	27
		2	✓	8	13	5
	C	1	✓	64	101	37
		2	✓	8	48	40
	D	1	✓	18	48	30
	E	1	✓	18	48	30
	F	1	✓	53	59	6
	G	1	✓	64	91	27
	H	1	✓	106	3	17
	I	1	✓	106	3	17
	J	1	✓	96	101	5
	K	1	✓	53	59	6
		2	✓	106	3	17
	L	1	✓	59	101	42
		2	✓	3	13	10
	M	1	✓	96	101	5
	N	1	✓	96	101	5

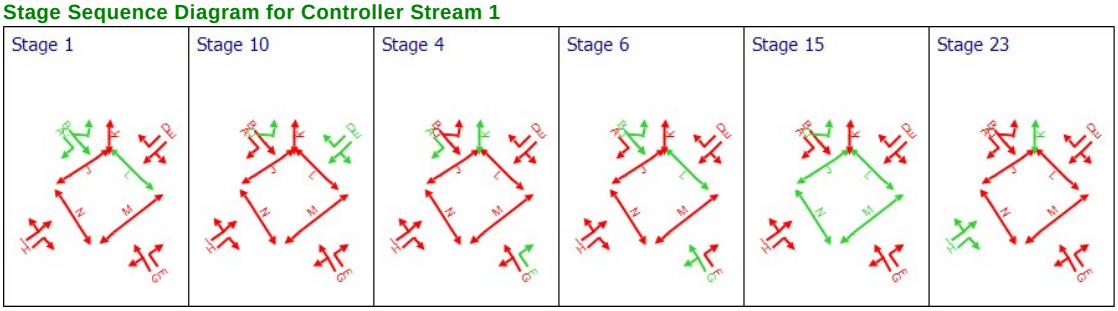
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1			Green Period 2		
					Start	End	Duration	Start	End	Duration
A	1	1	1	E	18	48	30			
A	2	1	1	D	18	48	30			
B	1	1	1	G	64	91	27			
B	2	1	1	F	53	59	6			
C	1	1	1	I	106	3	17			
C	2	1	1	H	106	3	17			
D	2	1	1	B	64	91	27	8	13	5
D	3	1	1	A	53	59	6	8	13	5
D-1	1	1	1	C	64	101	37	8	48	40

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)
08:00-09:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	E	459	2038	30	526	87	3	63.64	17.22	95.47	76.08
		2		D	194	2120	30	548	35	154	38.13	5.32	29.52	50.57
	Ax	1	(untitled)		412	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.56
	B	1	(untitled)	G	460	2033	27	474	97	-7	102.30	22.33	114.30	115.78
		2		F	88	2163	6	126	70	29	86.06	3.61	18.47	99.53
	Bx	1	(untitled)		758	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	28.06
	C	1	(untitled)	I	262	2038	17	306	86	5	80.66	10.77	46.25	96.72
		2		H	153	2124	17	319	48	87	51.90	4.85	21.14	67.74
	Cx	1	(untitled)		521	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	31.93
	D	2	(untitled)	B	478	2209	32	626	76	18	36.83	11.99	13.79	96.83
		3		A	38	2144	11	232	16	450	27.67	1.47	16.34	33.86
	Dx	1	(untitled)		550	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.91
	D-1	1	(untitled)	C	109	1990	77	1310	8	982	4.12	0.82	9.07	10.37
	9	1			625	2059	120	2059	30	196	0.38	0.07	0.46	10.22

Data Entry - Stage Start and End

Resultant Stage

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,C,L	8	13	5	1	5
	2	✓	10	C,D,E	18	48	30	1	22
	3	✓	4	A,F,K	53	59	6	1	5
	4	✓	6	B,C,G,L	64	91	27	1	27
	5	✓	15	C,J,L,M,N	96	101	5	1	5
	6	✓	23	H,I,K	106	3	17	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	0	0	Unknown
	B	B	5	300	0	0	Unknown
	C	C	5	300	0	0	Unknown
	D	D	5	300	0	0	Unknown
	E	E	22	300	0	0	Unknown
	F	F	5	300	0	0	Unknown
	G	G	27	27	0	0	Unknown
	H	H	5	300	0	0	Unknown
	I	I	5	300	0	0	Unknown
	J	J	5	300	0	0	Pedestrian
	K	K	5	300	0	0	Pedestrian
	L	L	5	300	0	0	Pedestrian
	M	M	5	300	0	0	Pedestrian
	N	N	5	300	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2120	100	100
Ax	1	✓	213.03	NetworkDefault	0.00	Normal						100	100
B	1	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2033	100	100
	2	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2163	100	100
Bx	1	✓	233.82	NetworkDefault	0.00	Normal						100	100
C	1	✓	133.82	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	132.01	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2124	100	100
Cx	1	✓	266.10	NetworkDefault	0.00	Normal						100	100
D	2		500.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2209	100	100
	3	✓	51.57	Flare	0.00	Normal	✓	✓		Sum of lanes	2144	100	100
Dx	1	✓	215.92	NetworkDefault	0.00	Normal						100	100
D-1	1	✓	52.09	NetworkDefault	0.00	Normal	✓	✓	✓	Sum of lanes	1990	100	100
9	1	✓	82.02	NetworkDefault	0.00	Normal	✓			Sum of lanes	2059	100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
08:00-09:00	1	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	2	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	3	1	50	1	52	4.86	0.81
		2	50	1	52	11.12	0.64
	4	1	50	11	5	55.58	1.60
		2	50	11	5	71.48	1.67
	5	1	100	5	23	13.74	1.11
		2	100	5	23	20.03	1.39

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	87	3	459	2038	30	63.64	17.22	95.47	115.22	6.37	121.59
		2	35	154	194	2120	30	38.13	5.32	29.52	29.18	1.98	31.16
	Ax	1	0	Unrestricted	412	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	97	-7	460	2033	27	102.30	22.33	114.30	185.63	8.03	193.66
		2	70	29	88	2163	6	86.06	3.61	18.47	29.87	1.33	31.20
	Bx	1	0	Unrestricted	758	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	86	5	262	2038	17	80.66	10.77	46.25	83.36	3.94	87.30
		2	48	87	153	2124	17	51.90	4.85	21.14	31.32	1.81	33.12
	Cx	1	0	Unrestricted	521	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	76	18	478	2209	32	36.83	11.99	13.79	69.44	5.82	75.26
		3	16	450	38	2144	11	27.67	1.47	16.34	4.15	0.44	4.58
	Dx	1	0	Unrestricted	550	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	8	982	109	1990	77	4.12	0.82	9.07	1.77	0.45	2.23
	9	1	30	196	625	2059	120	0.38	0.07	0.46	0.94	0.00	0.94

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	459	459	0		2038	526	87		3	0.00	30
		2	194	194	0		2120	548	35		154	0.00	30
	Ax	1	412	412	0		Unrestricted	Unrestricted	0		Unrestricted	0.74	120
	B	1	460	460	0		2033	474	97	✓	-7	0.00	27
		2	88	88	0		2163	126	70		29	0.00	6
	Bx	1	758	758	0		Unrestricted	Unrestricted	0		Unrestricted	0.49	120
	C	1	262	262	0		2038	306	86		5	0.00	17
		2	153	153	0		2124	319	48		87	0.00	17
	Cx	1	521	521	0		Unrestricted	Unrestricted	0		Unrestricted	0.62	120
	D	2	478	478	0		2209	626	76		18	0.00	32
		3	38	38	0		2144	232	16		450	0.00	11
	Dx	1	550	550	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	120
	D-1	1	109	109	0		1990	1310	8		982	0.00	77
	9	1	625	625	0		2059	2059	30		196	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	12.44	63.64	5.43	2.68	115.22	110.62	430.69	77.05	6.37
		2	12.44	38.13	1.96	0.10	29.18	81.34	154.90	2.90	1.98
	Ax	1	25.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	13.48	102.30	5.82	7.25	185.63	139.27	447.00	193.66	8.03
		2	13.48	86.06	1.36	0.75	29.87	120.44	84.93	21.06	1.33
	Bx	1	28.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16.06	80.66	3.62	2.25	83.36	119.99	251.03	63.33	3.94
		2	15.84	51.90	1.99	0.22	31.32	94.12	137.47	6.53	1.81
	Cx	1	31.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	60.00	36.83	3.69	1.20	69.44	97.05	428.48	35.40	5.82
		3	6.19	27.67	0.28	0.02	4.15	91.67	33.88	0.95	0.44
	Dx	1	25.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	6.25	4.12	0.12	0.00	1.77	33.24	36.00	0.23	0.45
	9	1	9.84	0.38	0.00	0.07	0.94	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	17.22	18.03	95.47	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	5.32	18.03	29.52	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	37.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	B	1	0.00	22.33	19.53	114.30	0.27	0.00	0.00	0.00	0.00	0.00	
		2	0.00	3.61	19.53	18.47	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	40.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	C	1	0.00	10.77	23.27	46.25	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	4.85	22.96	21.14	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	46.28	0.00	0.00	0.00	0.00	15.00	0.00	15.00	
	D	2	0.00	11.99	86.96	13.79	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	1.47	8.97	16.34	0.00	0.00	0.00	10.00	0.00	10.00	
	Dx	1	0.00	0.00	37.55	0.00	0.00	0.00	0.00	8.00	0.00	8.00	
	D-1	1	0.00	0.82	9.06	9.07	0.00	0.00	0.00	0.00	0.00	0.00	
	9	1	0.00	0.07	14.26	0.46	0.00	0.00	0.00	0.00	0.00	0.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	47.60	9.70	4.91	76.08
		2	20.12	2.73	7.38	50.57
	Ax	1	87.77	2.93	30.00	25.56
	B	1	51.66	14.79	3.49	115.78
		2	9.88	2.43	4.06	99.53
	Bx	1	177.23	5.91	30.00	28.06
	C	1	35.06	7.04	4.98	96.72
		2	20.20	2.88	7.02	67.74
	Cx	1	138.64	4.62	30.00	31.93
	D	2	239.00	12.86	18.59	96.83
		3	1.96	0.36	5.48	33.86
	Dx	1	118.75	3.96	30.00	25.91
	D-1	1	5.68	0.31	18.08	10.37
	9	1	51.26	1.77	28.88	10.22

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	17.35	2.81	14.16	1.00	0.00	121.59
		2	0.00	0.00	✓	5.32	0.10	4.89	1.00	0.00	31.16
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	24.20	9.12	20.88	1.00	0.00	193.66
		2	0.00	0.00	✓	3.63	0.77	3.54	1.00	0.00	31.20
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	10.91	2.39	9.81	1.00	0.00	87.30
		2	0.00	0.00	✓	4.85	0.22	4.56	1.00	0.00	33.12
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	2	0.00	0.00	✓	12.01	3.11	9.75	1.00	0.00	75.26
		3	0.00	0.00	✓	1.47	0.02	0.73	1.00	0.00	4.58
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D-1	1	0.00	0.00	✓	0.82	0.00	0.79	1.00	0.00	2.23
	9	1	0.00	0.00	✓	0.07			1.00	0.00	0.94

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	2	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	3	1	1	50	11000	52	4.86	0.81	0.96	0.96
		2	1	50	11000	52	11.12	0.64	2.19	2.19
	4	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	71.48	1.67	14.10	14.10
	5	1	5	100	11000	23	13.74	1.11	5.42	5.42
		2	5	100	11000	23	20.03	1.39	7.90	7.90

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	1	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	2	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	3	1	50	50	0		11000	4767	1		8480	1.62	52
		2	50	50	0		11000	4767	1		8480	0.00	52
	4	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	1.62	5
	5	1	100	100	0		11000	2108	5		1798	1.51	23
		2	100	100	0		11000	2108	5		1798	0.00	23

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	13.00	55.58	0.77	0.00	10.96
		2	13.00	55.58	0.77	0.00	10.96
	2	1	11.67	55.58	0.77	0.00	10.96
		2	11.67	55.58	0.77	0.00	10.96
	3	1	12.67	4.86	0.07	0.00	0.96
		2	11.67	11.12	0.15	0.00	2.19
	4	1	11.00	55.58	0.77	0.00	10.96
		2	12.00	71.48	0.99	0.00	14.10
	5	1	6.00	13.74	0.38	0.00	5.42
		2	5.00	20.03	0.56	0.00	7.90

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	1	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	2	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	3	1	0.81	10.00	8.06	0.00	0.00	0.00
		2	0.64	10.00	6.39	0.00	0.00	0.00
	4	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.67	10.00	16.67	0.00	0.00	0.00
	5	1	1.11	10.00	11.11	0.00	0.00	0.00
		2	1.39	10.00	13.89	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	1	1	0.95	0.95	1.00	68.58
		2	0.95	0.95	1.00	68.58
	2	1	0.85	0.93	0.91	67.25
		2	0.85	0.93	0.91	67.25
	3	1	0.95	0.24	3.90	17.53
		2	0.85	0.32	2.69	22.78
	4	1	0.80	0.92	0.87	66.58
		2	0.90	1.16	0.78	83.48
	5	1	0.90	0.55	1.64	19.74
		2	0.70	0.70	1.01	25.03

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	2	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	3	1	0.00	0.00	0.81	1.00	0.00	0.96
		2	0.00	0.00	0.64	1.00	0.00	2.19
	4	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.67	1.00	0.00	14.10
	5	1	0.00	0.00	1.11	1.00	0.00	5.42
		2	0.00	0.00	1.39	1.00	0.00	7.90

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
1	01/04/2022 13:56:11	01/04/2022 13:56:12	08:00	120	666.42	44.81	96.97	B/1	1	4	B/1	9/1	B/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	97	-7	5107	847	27.35	550.88	30.16	581.04

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	11	600	180	36.08	85.38	85.38

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	5707	5707	0		97	✓	-7	1027

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	22.17	28.26	30.27	14.53	636.25	42.15	2004.39	401.10	30.16

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	114.30	0.00	33.00	0.00	33.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	1013.51	79.95	12.68

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	666.42

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	122.6	122.3	95.8	0.0	0.0	0.0	0.0
	2	76.0	0.0	46.2	135.1	0.0	0.0	0.0	0.0
	3	108.0	76.5	0.0	104.1	0.0	0.0	0.0	0.0
	4	147.7	141.7	125.1	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	68.6	42.5	0.0
	6	0.0	0.0	0.0	0.0	68.6	0.0	0.0	67.3
	7	0.0	0.0	0.0	0.0	42.6	0.0	0.0	108.5
	8	0.0	0.0	0.0	0.0	0.0	67.3	86.3	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	47		122.63		47	122.63
2	1	3	215		122.28		215	122.28
9	3	4	127		104.14		127	104.14
10	3	1	332		108.02		332	108.02
11	4	2	309		141.69		309	141.69
13	4	1	151		147.71		151	147.71
14	7	5		50		42.55	50	42.55
15	7	8		50		108.50	50	108.50
16	2	4	478		135.11		478	135.11
17	2	3	109		46.16		109	46.16
18	8	6		50		67.25	50	67.25
19	4	3	88		125.10		88	125.10
20	3	2	194		76.48		194	76.48
23	5	6		50		68.58	50	68.58
34	6	8		50		67.25	50	67.25
35	6	5		50		68.58	50	68.58
36	8	7		50		86.33	50	86.33
37	5	7		50		42.53	50	42.53
38	1	4	153		95.79		153	95.79
39	2	1	38		76.01		38	76.01

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)
A	1	(untitled)	1	1	E	459	2038	30	0.00	87	3	76.08	63.64	110.62	17.22
	2		1	1	D	194	2120	30	0.00	35	154	50.57	38.13	81.34	5.32
Ax	1	(untitled)				412	Unrestricted	120	0.00	0	Unrestricted	25.56	0.00	0.00	0.00
B	1	(untitled)	1	1	G	460 <	2033	27	0.00	97	-7	115.78	102.30	139.27	22.33 +
	2		1	1	F	88	2163	6	0.00	70	29	99.53	86.06	120.44	3.61
Bx	1	(untitled)				758	Unrestricted	120	0.00	0	Unrestricted	28.06	0.00	0.00	0.00
C	1	(untitled)	1	1	I	262	2038	17	0.00	86	5	96.72	80.66	119.99	10.77
	2		1	1	H	153	2124	17	0.00	48	87	67.74	51.90	94.12	4.85
Cx	1	(untitled)				521	Unrestricted	120	15.00	0	Unrestricted	31.93	0.00	0.00	0.00
D	2	(untitled)	1	1	B	478	2209	32	0.00	76	18	96.83	36.83	97.05	11.99
	3		1	1	A	38	2144	11	10.00	16	450	33.86	27.67	91.67	1.47
Dx	1	(untitled)				550	Unrestricted	120	8.00	0	Unrestricted	25.91	0.00	0.00	0.00
D-1	1	(untitled)	1	1	C	109	1990	77	0.00	8	982	10.37	4.12	33.24	0.82
9	1		1			625	2059	120	0.00	30	196	10.22	0.38	0.00	0.07

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
	2	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
2	1	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
	2	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
3	1	(untitled)	1	1	L	50	11000	52	1	8480	17.53	4.86	0.81	100	0
	2	(untitled)	1	1	L	50	11000	52	1	8480	22.78	11.12	0.64	100	0
4	1	(untitled)	1	1	J	50	11000	5	11	725	66.58	55.58	1.60	100	0
	2	(untitled)	1	1	J	50	11000	5	11	725	83.48	71.48	1.67	100	0
5	1	(untitled)		1	K	100	11000	23	5	1798	19.74	13.74	1.11	100	0
	2	(untitled)		1	K	100	11000	23	5	1798	25.03	20.03	1.39	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	1004.81	72.29	13.90	24.26	14.53	550.88	30.16	0.00	581.04
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	8.70	7.66	1.14	6.01	0.00	85.38	0.00	0.00	85.38
TOTAL	1013.51	79.95	12.68	30.27	14.53	636.25	30.16	0.00	666.42

- *< = 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***

A2 - 2025
D2 - 2025, AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
2	01/04/2022 13:56:13	01/04/2022 13:56:14	08:00	120	792.18	53.42	101.40	B/1	1	4	B/1	9/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2025, AM	(untitled)			08:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
D-1	(untitled)		1
9			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	103.69	✓	Sum of lanes	2038			✓		Normal	
	2			✓	103.69	✓	Sum of lanes	2120			✓		Normal	
Ax	1	(untitled)		✓	213.03								Normal	
B	1	(untitled)		✓	112.31	✓	Sum of lanes	2033			✓		Normal	
	2			✓	112.31	✓	Sum of lanes	2163			✓		Normal	
Bx	1	(untitled)		✓	233.82								Normal	
C	1	(untitled)		✓	133.82	✓	Sum of lanes	2038			✓		Normal	
	2			✓	132.01	✓	Sum of lanes	2124			✓		Normal	
Cx	1	(untitled)		✓	266.10								Normal	
D	2	(untitled)			500.00	✓	Sum of lanes	2209			✓		Normal	
	3			✓	51.57	✓	Sum of lanes	2144	✓	1800	✓		Normal	
Dx	1	(untitled)		✓	215.92								Normal	
D-1	1	(untitled)		✓	52.09	✓	Sum of lanes	1990			✓	✓	Normal	
9	1			✓	82.02	✓	Sum of lanes	2059					Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	28	42.06	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	35.52		2120
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	33	39.22	✓	2033
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	70.68		2163
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	18	26.29	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	37.44		2124
Cx	1	1	(untitled)											
D	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00		2209
	3	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	49.21		2144
Dx	1	1	(untitled)											
D-1	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	43.60	✓	1990
9	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00	✓	2059

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
A	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Ax	1	NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Cx	1	NetworkDefault	100	100	100		0.00		
D	2	NetworkDefault	100	100	100		0.00		
	3	Flare	100	100	100		0.00		
Dx	1	NetworkDefault	100	100	100		0.00		
D-1	1	NetworkDefault	100	100	100		0.00		
9	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	479	479
	2	202	202
Ax	1	429	429
B	1	481	481
	2	92	92
Bx	1	791	791
C	1	273	273
	2	159	159
Cx	1	544	544
D	2	500	500
	3	39	39
Dx	1	574	574
D-1	1	113	113
9	1	652	652

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	E	
	2	1	D	
B	1	1	G	
	2	1	F	
C	1	1	I	
	2	1	H	
D	2	1	B	
	3	1	A	
D-1	1	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	12.44	30.00
	2	12.44	30.00
B	1	13.48	30.00
	2	13.48	30.00
C	1	16.06	30.00
	2	15.84	30.00
9	1	9.84	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	25.56	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	28.06	30.00	✓	Nearside	42.06
Cx	1	1	A/1	Cx/1	31.93	30.00	✓	Straight	Straight Movement
D	2	1	9/1	D/2	60.00	30.00	✓	Straight	Straight Movement
	3	1	9/1	D/3	6.19	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	25.91	30.00	✓	Nearside	26.29
D-1	1	1	9/1	D-1/1	6.25	30.00	✓	Straight	Straight Movement
Ax	1	2	D-1/1	Ax/1	25.56	30.00	✓	Nearside	43.60
Bx	1	2	C/2	Bx/1	28.06	30.00	✓	Offside	37.44
Cx	1	2	B/1	Cx/1	31.93	30.00	✓	Nearside	39.22
Dx	1	2	B/1	Dx/1	25.91	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	25.56	30.00	✓	Offside	70.68
Bx	1	3	D/2	Bx/1	28.06	30.00	✓	Straight	Straight Movement
Cx	1	3	D/3	Cx/1	31.93	30.00	✓	Offside	49.21
Dx	1	3	A/2	Dx/1	25.91	30.00	✓	Offside	35.52

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
D-1	1	AllTraffic		

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	18.00	12.00	5.40
2	(untitled)		1		Farside	16.00	10.67	5.40
3	(untitled)		1		Farside	16.00	10.67	5.40
4	(untitled)		1		Farside	15.00	10.00	5.40
5	(untitled)				Farside	6.00	4.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	N	
3	1	L	
4	1	J	
5	1	K	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Pedestrian Crossing Connectors

Pedestrian Crossing Connectors

Pedestrian crossing connector	Pedestrian crossing1	Pedestrian crossing2	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	5:1	3:1	3.00	2.00	5.40
2	5:1	4:2	3.00	2.00	5.40

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	49	224	159	0	0	0	0
	2	39	0	113	500	0	0	0	0
	3	347	202	0	132	0	0	0	0
	4	158	323	92	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	9/1	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	5:2E	5:2X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	49
	2		1	3	C/1, Ax/1	Normal	224
	9		3	4	A/1, Bx/1	Normal	132
	10		3	1	A/1, Cx/1	Normal	347
	11		4	2	B/1, Dx/1	Normal	323
	13		4	1	B/1, Cx/1	Normal	158
	16		2	4	9/1, D/2, Bx/1	Normal	500
	17		2	3	9/1, D-1/1, Ax/1	Normal	113
	19		4	3	B/2, Ax/1	Normal	92
	20		3	2	A/2, Dx/1	Normal	202
	38		1	4	C/2, Bx/1	Normal	159
	39		2	1	9/1, D/3, Cx/1	Normal	39

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	14		7	5	5:2E, 5:1X, 3:1E, 3:2X	Normal	50
	15		7	8	5:2E, 5:1X, 4:2E, 4:1X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	36		8	7	4:1E, 4:2X, 5:1E, 5:2X	Normal	50
	37		5	7	3:2E, 3:1X, 5:1E, 5:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	0	0	Unknown	
	B	(untitled)	5	300	0	0	Unknown	
	C	(untitled)	5	300	0	0	Unknown	
	D	(untitled)	5	300	0	0	Unknown	
	E	(untitled)	22	300	0	0	Unknown	
	F	(untitled)	5	300	0	0	Unknown	
	G	(untitled)	27	27	0	0	Unknown	
	H	(untitled)	5	300	0	0	Unknown	
	I	(untitled)	5	300	0	0	Unknown	
	J	(untitled)	5	300	0	0	Pedestrian	0
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, L	1
	2	A, B, K, L	1
	3	A, C, L, M	1
	4	A, F, K	1
	5	A, K, L, M	1
	6	B, C, G, L	1
	7	B, C, L, N	1
	8	B, G, K, L	1
	9	B, K, L, N	1
	10	C, D, E	1
	11	C, D, H	1
	12	C, D, M, N	1
	13	C, E, J	1
	14	C, H, J, L	1
	15	C, J, L, M, N	1
	16	D, E, K	1
	17	D, H, K	1
	18	D, K, M, N	1
	19	E, I, K	1
	20	E, J, K	1
	21	F, G, K	1
	22	F, J, K, N	1
	23	H, I, K	1
	24	H, J, K, L	1
	25	I, K, M	1
	26	J, K, L, M, N	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 10, 4, 6, 15, 23	13, 49, 59, 91, 101, 3
	2	(untitled)	Single	1, 10, 4, 6, 23, 15	16, 44, 68, 94, 122, 147
	3	(untitled)	Single	1, 10, 4, 6, 23, 26	16, 44, 68, 94, 122, 147
	4	(untitled)	Single	1, 10, 4, 6, 26, 23	16, 44, 68, 94, 120, 149
	5	(untitled)	Single	1, 10, 4, 6, 11, 15, 19	12, 36, 56, 78, 102, 124, 149
	6	(untitled)	Single	1, 10, 4, 6, 11, 15, 23	12, 36, 56, 78, 102, 124, 149
	7	(untitled)	Single	1, 10, 4, 6, 11, 15, 25	12, 36, 56, 78, 102, 124, 147
	8	(untitled)	Single	1, 10, 4, 6, 11, 19, 15	13, 38, 58, 80, 104, 125, 147
	9	(untitled)	Single	1, 10, 4, 6, 11, 19, 26	13, 38, 58, 80, 104, 125, 147
	10	(untitled)	Single	1, 10, 4, 6, 11, 22, 25	12, 36, 56, 78, 101, 124, 147

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5		5	5	5	5				0
	B				5	5	5		5	5	5			0	
	C						5			5		5			
	D	5	5				5	5		5	5		5		
	E	5	5				5	5	5				5	5	0
	F		5	5	5	5			5	5			0	5	
	G	5			5	5			5	5	0			5	5
	H	5	5			5	5	5						0	5
	I	5	5	5	5		5	5			5		0		5
	J	5	5		5			5		5					
	K			5											
	L				5	5	5			5					
	M		5			5	5	5	5						
	N	5				5		5	5	5					

Banned Stage transitions for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1																										
	2																										
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
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	23																										
	24																										
	25																										
	26																										

Interstage Matrix for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1	0	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	2	5	0	5	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	3	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	4	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	6	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	7	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	8	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	9	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	11	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	12	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	13	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5
	14	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5
	15	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5
	16	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5
	17	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	18	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	19	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5
	20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5
	21	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5
	22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5
	23	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5
	24	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5
	25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5
	26	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	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	A,B,C,L	8	13	5	1	5
	2	✓	10	C,D,E	18	49	31	1	22
	3	✓	4	A,F,K	54	59	5	1	5
	4	✓	6	B,C,G,L	64	91	27	1	27
	5	✓	15	C,J,L,M,N	96	101	5	1	5
	6	✓	23	H,I,K	106	3	17	1	5

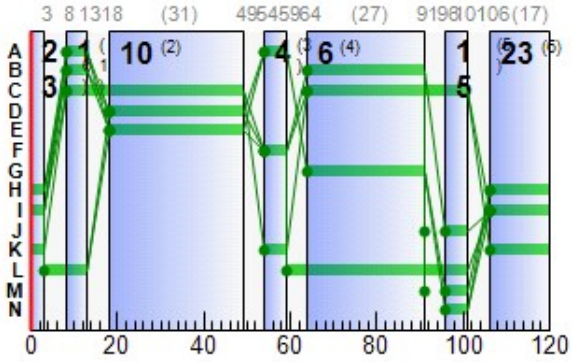
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	54	59	5
		2	✓	8	13	5
	B	1	✓	64	91	27
		2	✓	8	13	5
	C	1	✓	64	101	37
		2	✓	8	49	41
	D	1	✓	18	49	31
	E	1	✓	18	49	31
	F	1	✓	54	59	5
	G	1	✓	64	91	27
	H	1	✓	106	3	17
	I	1	✓	106	3	17
	J	1	✓	96	101	5
	K	1	✓	54	59	5
		2	✓	106	3	17
	L	1	✓	59	101	42
		2	✓	3	13	10
	M	1	✓	96	101	5
	N	1	✓	96	101	5

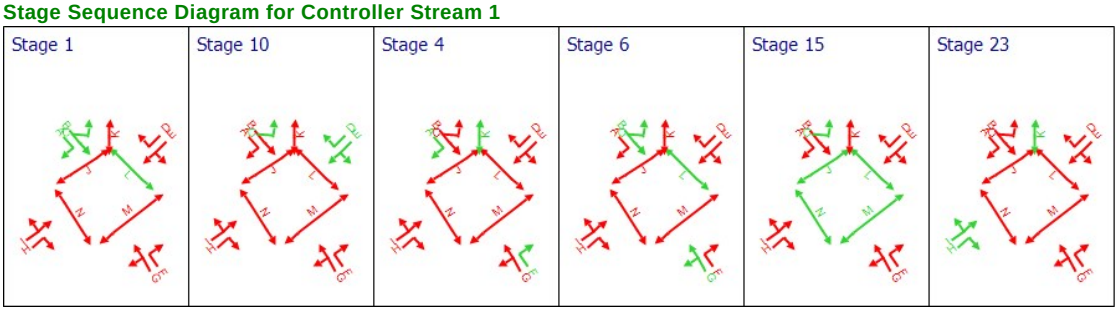
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1			Green Period 2		
					Start	End	Duration	Start	End	Duration
A	1	1	1	E	18	49	31			
A	2	1	1	D	18	49	31			
B	1	1	1	G	64	91	27			
B	2	1	1	F	54	59	5			
C	1	1	1	I	106	3	17			
C	2	1	1	H	106	3	17			
D	2	1	1	B	64	91	27	8	13	5
D	3	1	1	A	54	59	5	8	13	5
D-1	1	1	1	C	64	101	37	8	49	41

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)
08:00-09:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	E	479	2038	31	543	88	2	64.19	18.23	101.09	76.64
		2		D	202	2120	31	565	36	152	37.44	5.54	30.73	49.88
	Ax	1	(untitled)		429	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.56
	B	1	(untitled)	G	481	2033	27	474	101	-11	137.18	27.95	143.09	150.66
		2		F	92	2163	5	108	85	6	127.90	4.86	24.90	141.38
	Bx	1	(untitled)		791	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	28.06
	C	1	(untitled)	I	273	2038	17	306	89	1	89.76	11.88	51.06	105.82
		2		H	159	2124	17	319	50	80	52.44	5.10	22.23	68.29
	Cx	1	(untitled)		542	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	31.93
	D	2	(untitled)	B	500	2209	32	626	80	13	39.81	13.26	15.25	99.81
		3		A	39	2144	10	214	18	395	28.36	1.47	16.39	34.55
	Dx	1	(untitled)		570	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.91
	D-1	1	(untitled)	C	113	1990	78	1327	9	957	4.00	0.85	9.40	10.26
	9	1			652	2059	120	2059	32	184	0.40	0.07	0.51	10.25

Data Entry - Stage Start and End

Resultant Stage

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,C,L	8	13	5	1	5
	2	✓	10	C,D,E	18	49	31	1	22
	3	✓	4	A,F,K	54	59	5	1	5
	4	✓	6	B,C,G,L	64	91	27	1	27
	5	✓	15	C,J,L,M,N	96	101	5	1	5
	6	✓	23	H,I,K	106	3	17	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	0	0	Unknown
	B	B	5	300	0	0	Unknown
	C	C	5	300	0	0	Unknown
	D	D	5	300	0	0	Unknown
	E	E	22	300	0	0	Unknown
	F	F	5	300	0	0	Unknown
	G	G	27	27	0	0	Unknown
	H	H	5	300	0	0	Unknown
	I	I	5	300	0	0	Unknown
	J	J	5	300	0	0	Pedestrian
	K	K	5	300	0	0	Pedestrian
	L	L	5	300	0	0	Pedestrian
	M	M	5	300	0	0	Pedestrian
	N	N	5	300	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2120	100	100
Ax	1	✓	213.03	NetworkDefault	0.00	Normal						100	100
B	1	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2033	100	100
	2	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2163	100	100
Bx	1	✓	233.82	NetworkDefault	0.00	Normal						100	100
C	1	✓	133.82	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	132.01	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2124	100	100
Cx	1	✓	266.10	NetworkDefault	0.00	Normal						100	100
D	2		500.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2209	100	100
	3	✓	51.57	Flare	0.00	Normal	✓	✓		Sum of lanes	2144	100	100
Dx	1	✓	215.92	NetworkDefault	0.00	Normal						100	100
D-1	1	✓	52.09	NetworkDefault	0.00	Normal	✓	✓	✓	Sum of lanes	1990	100	100
9	1	✓	82.02	NetworkDefault	0.00	Normal	✓			Sum of lanes	2059	100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
08:00-09:00	1	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	2	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	3	1	50	1	52	4.86	0.81
		2	50	1	52	11.12	0.64
	4	1	50	11	5	55.58	1.60
		2	50	11	5	71.05	1.67
	5	1	100	5	22	13.88	1.11
		2	100	5	22	20.45	1.42

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	88	2	479	2038	31	64.19	18.23	101.09	121.28	6.69	127.98
		2	36	152	202	2120	31	37.44	5.54	30.73	29.83	2.05	31.88
	Ax	1	0	Unrestricted	429	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	101	-11	481	2033	27	137.18	27.95	143.09	260.27	9.73	270.01
		2	85	6	92	2163	5	127.90	4.86	24.90	46.41	1.72	48.14
	Bx	1	0	Unrestricted	791	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	89	1	273	2038	17	89.76	11.88	51.06	96.66	4.35	101.00
		2	50	80	159	2124	17	52.44	5.10	22.23	32.89	1.90	34.79
	Cx	1	0	Unrestricted	542	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	80	13	500	2209	32	39.81	13.26	15.25	78.51	6.26	84.76
		3	18	395	39	2144	10	28.36	1.47	16.39	4.36	0.46	4.82
	Dx	1	0	Unrestricted	570	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	9	957	113	1990	78	4.00	0.85	9.40	1.78	0.46	2.24
	9	1	32	184	652	2059	120	0.40	0.07	0.51	1.04	0.00	1.04

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	479	479	0		2038	543	88		2	0.00	31
		2	202	202	0		2120	565	36		152	0.00	31
	Ax	1	429	429	0		Unrestricted	Unrestricted	0		Unrestricted	0.75	120
	B	1	481	474	0		2033	474	101	✓	-11	0.00	27
		2	92	92	0		2163	108	85		6	0.00	5
	Bx	1	791	791	0		Unrestricted	Unrestricted	0		Unrestricted	0.49	120
	C	1	273	273	0		2038	306	89		1	0.00	17
		2	159	159	0		2124	319	50		80	0.00	17
	Cx	1	542	542	2	✓	Unrestricted	Unrestricted	0		Unrestricted	0.61	120
	D	2	500	500	0		2209	626	80		13	0.00	32
		3	39	39	0		2144	214	18		395	0.00	10
	Dx	1											
	D-1	1	113	113	0		1990	1327	9		957	0.00	78
	9	1	652	652	0		2059	2059	32		184	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	12.44	64.19	5.61	2.93	121.28	111.44	449.85	83.95	6.69
		2	12.44	37.44	2.00	0.10	29.83	81.12	160.90	2.96	2.05
	Ax	1	25.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	13.48	137.18	6.06	12.27	260.27	163.65	470.48	305.81	9.73
		2	13.48	127.90	1.45	1.82	46.41	149.29	90.04	47.31	1.72
	Bx	1	28.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16.06	89.76	3.80	3.01	96.66	126.95	263.32	83.25	4.35
		2	15.84	52.44	2.07	0.25	32.89	95.13	143.95	7.30	1.90
	Cx	1	31.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	60.00	39.81	4.00	1.53	78.51	99.79	454.10	44.86	6.26
		3	6.19	28.36	0.29	0.02	4.36	93.08	35.10	1.20	0.46
	Dx	1	25.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	6.25	4.00	0.12	0.00	1.78	32.41	36.38	0.24	0.46
	9	1	9.84	0.40	0.00	0.07	1.04	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	18.23	18.03	101.09	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	5.54	18.03	30.73	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	37.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	B	1	0.00	27.95	19.53	143.09	2.27	0.00	0.00	0.00	0.00	0.00	
		2	0.00	4.86	19.53	24.90	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	40.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	C	1	0.00	11.88	23.27	51.06	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	5.10	22.96	22.23	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	46.28	0.00	0.00	0.00	0.00	14.00	0.00	14.00	
	D	2	0.00	13.26	86.96	15.25	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	1.47	8.97	16.39	0.00	0.00	0.00	9.00	0.00	9.00	
	Dx	1	0.00	0.00	37.55	0.00	0.00	0.00	0.00	6.00	0.00	6.00	
	D-1	1	0.00	0.85	9.06	9.40	0.00	0.00	0.00	0.00	0.00	0.00	
	9	1	0.00	0.07	14.26	0.51	0.00	0.00	0.00	0.00	0.00	0.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	49.67	10.20	4.87	76.64
		2	20.95	2.80	7.48	49.88
	Ax	1	91.39	3.05	30.00	25.56
	B	1	54.02	20.13	2.68	150.66
		2	10.33	3.61	2.86	141.38
	Bx	1	184.95	6.16	30.00	28.06
	C	1	36.53	8.02	4.55	105.82
		2	20.99	3.02	6.96	68.29
	Cx	1	144.18	4.81	30.00	31.93
	D	2	250.00	13.86	18.04	99.81
		3	2.01	0.37	5.37	34.55
	Dx	1	122.97	4.10	30.00	25.91
	D-1	1	5.89	0.32	18.29	10.26
	9	1	53.48	1.86	28.81	10.25

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	18.39	3.08	14.79	1.00	0.00	127.98
		2	0.00	0.00	✓	5.54	0.10	5.04	1.00	0.00	31.88
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	34.37	18.69	30.81	1.00	0.00	270.01
		2	0.00	0.00	✓	5.10	2.05	4.97	1.00	0.00	48.14
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	12.18	3.30	11.04	1.00	0.00	101.00
		2	0.00	0.00	✓	5.11	0.25	4.75	1.00	0.00	34.79
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	2	0.00	0.00	✓	13.29	3.71	10.65	1.00	0.00	84.76
		3	0.00	0.00	✓	1.47	0.02	0.76	1.00	0.00	4.82
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D-1	1	0.00	0.00	✓	0.85	0.00	0.82	1.00	0.00	2.24
	9	1	0.00	0.00	✓	0.07			1.00	0.00	1.04

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	2	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	3	1	1	50	11000	52	4.86	0.81	0.96	0.96
		2	1	50	11000	52	11.12	0.64	2.19	2.19
	4	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	71.05	1.67	14.01	14.01
	5	1	5	100	11000	22	13.88	1.11	5.47	5.47
		2	5	100	11000	22	20.45	1.42	8.07	8.07

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	1	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	2	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	3	1	50	50	0		11000	4767	1		8480	1.63	52
		2	50	50	0		11000	4767	1		8480	0.00	52
	4	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	1.63	5
	5	1	100	100	0		11000	2017	5		1715	1.51	22
		2	100	100	0		11000	2017	5		1715	0.00	22

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	13.00	55.58	0.77	0.00	10.96
		2	13.00	55.58	0.77	0.00	10.96
	2	1	11.67	55.58	0.77	0.00	10.96
		2	11.67	55.58	0.77	0.00	10.96
	3	1	12.67	4.86	0.07	0.00	0.96
		2	11.67	11.12	0.15	0.00	2.19
	4	1	11.00	55.58	0.77	0.00	10.96
		2	12.00	71.05	0.99	0.00	14.01
	5	1	6.00	13.88	0.39	0.00	5.47
		2	5.00	20.45	0.57	0.00	8.07

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	1	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	2	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	3	1	0.81	10.00	8.06	0.00	0.00	0.00
		2	0.64	10.00	6.39	0.00	0.00	0.00
	4	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.67	10.00	16.67	0.00	0.00	0.00
	5	1	1.11	10.00	11.11	0.00	0.00	0.00
		2	1.42	10.00	14.17	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	1	1	0.95	0.95	1.00	68.58
		2	0.95	0.95	1.00	68.58
	2	1	0.85	0.93	0.91	67.25
		2	0.85	0.93	0.91	67.25
	3	1	0.95	0.24	3.90	17.53
		2	0.85	0.32	2.69	22.78
	4	1	0.80	0.92	0.87	66.58
		2	0.90	1.15	0.78	83.05
	5	1	0.90	0.55	1.63	19.88
		2	0.70	0.71	0.99	25.45

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	2	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	3	1	0.00	0.00	0.81	1.00	0.00	0.96
		2	0.00	0.00	0.64	1.00	0.00	2.19
	4	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.67	1.00	0.00	14.01
	5	1	0.00	0.00	1.11	1.00	0.00	5.47
		2	0.00	0.00	1.42	1.00	0.00	8.07

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
2	01/04/2022 13:56:13	01/04/2022 13:56:14	08:00	120	792.18	53.42	101.40	B/1	1	4	B/1	9/1	B/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	101	-11	5321	848	32.07	673.05	33.62	706.66

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	11	600	178	36.13	85.51	85.51

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	5921	5915	7	✓	101	✓	-11	1026

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	22.23	32.48	31.42	22.00	758.56	45.46	2104.12	576.89	33.62

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	143.09	0.00	29.00	0.00	29.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	1056.06	89.98	11.74

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	792.18

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	131.7	131.4	96.3	0.0	0.0	0.0	0.0
	2	76.7	0.0	46.1	138.1	0.0	0.0	0.0	0.0
	3	108.6	75.8	0.0	104.7	0.0	0.0	0.0	0.0
	4	182.6	176.6	166.9	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	68.6	42.7	0.0
	6	0.0	0.0	0.0	0.0	68.6	0.0	0.0	67.3
	7	0.0	0.0	0.0	0.0	43.0	0.0	0.0	108.5
	8	0.0	0.0	0.0	0.0	0.0	67.3	86.5	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	49		131.73		49	131.73
2	1	3	224		131.38		224	131.38
9	3	4	132		104.69		132	104.69
10	3	1	347		108.57		347	108.57
11	4	2	323		176.57		323	176.57
13	4	1	158		182.59		158	182.59
14	7	5		50		42.98	50	42.98
15	7	8		50		108.50	50	108.50
16	2	4	500		138.11		500	138.11
17	2	3	113		46.07		113	46.07
18	8	6		50		67.25	50	67.25
19	4	3	92		166.94		92	166.94
20	3	2	202		75.79		202	75.79
23	5	6		50		68.58	50	68.58
34	6	8		50		67.25	50	67.25
35	6	5		50		68.58	50	68.58
36	8	7		50		86.46	50	86.46
37	5	7		50		42.66	50	42.66
38	1	4	159		96.34		159	96.34
39	2	1	39		76.73		39	76.73

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)
A	1	(untitled)	1	1	E	479 <	2038	31	0.00	88	2	76.64	64.19	111.44	18.23 +
	2		1	1	D	202	2120	31	0.00	36	152	49.88	37.44	81.12	5.54
Ax	1	(untitled)				429	Unrestricted	120	0.00	0	Unrestricted	25.56	0.00	0.00	0.00
B	1	(untitled)	1	1	G	481 <	2033	27	0.00	101	-11	150.66	137.18	163.65	27.95 +
	2		1	1	F	92	2163	5	0.00	85	6	141.38	127.90	149.29	4.86
Bx	1	(untitled)				791	Unrestricted	120	0.00	0	Unrestricted	28.06	0.00	0.00	0.00
C	1	(untitled)	1	1	I	273	2038	17	0.00	89	1	105.82	89.76	126.95	11.88
	2		1	1	H	159	2124	17	0.00	50	80	68.29	52.44	95.13	5.10
Cx	1	(untitled)				542	Unrestricted	120	14.00	0	Unrestricted	31.93	0.00	0.00	0.00
D	2	(untitled)	1	1	B	500	2209	32	0.00	80	13	99.81	39.81	99.79	13.26
	3		1	1	A	39	2144	10	9.00	18	395	34.55	28.36	93.08	1.47
Dx	1	(untitled)				570	Unrestricted	120	6.00	0	Unrestricted	25.91	0.00	0.00	0.00
D-1	1	(untitled)	1	1	C	113	1990	78	0.00	9	957	10.26	4.00	32.41	0.85
9	1		1			652	2059	120	0.00	32	184	10.25	0.40	0.00	0.07

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
	2	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
2	1	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
	2	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
3	1	(untitled)	1	1	L	50	11000	52	1	8480	17.53	4.86	0.81	100	0
	2	(untitled)	1	1	L	50	11000	52	1	8480	22.78	11.12	0.64	100	0
4	1	(untitled)	1	1	J	50	11000	5	11	725	66.58	55.58	1.60	100	0
	2	(untitled)	1	1	J	50	11000	5	11	725	83.05	71.05	1.67	100	0
5	1	(untitled)		1	K	100	11000	22	5	1715	19.88	13.88	1.11	100	0
	2	(untitled)		1	K	100	11000	22	5	1715	25.45	20.45	1.42	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	1047.36	82.31	12.72	25.39	22.00	673.05	33.62	0.00	706.66
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	8.70	7.67	1.13	6.02	0.00	85.51	0.00	0.00	85.51
TOTAL	1056.06	89.98	11.74	31.42	22.00	758.56	33.62	0.00	792.18

< = 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

A3 - 2025 + LAP Developments
D3 - 2025 + LAP Developments, AM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:56:14	01/04/2022 13:56:15	08:00	120	4353.18	301.16	154.47	B/1	5	21	B/1	9/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025 + LAP Developments		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2025 + LAP Developments, AM	(untitled)			08:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
D-1	(untitled)		1
9			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	103.69	✓	Sum of lanes	2038			✓		Normal	
	2			✓	103.69	✓	Sum of lanes	2120			✓		Normal	
Ax	1	(untitled)		✓	213.03								Normal	
B	1	(untitled)		✓	112.31	✓	Sum of lanes	2042			✓		Normal	
	2			✓	112.31	✓	Sum of lanes	2163			✓		Normal	
Bx	1	(untitled)		✓	233.82								Normal	
C	1	(untitled)		✓	133.82	✓	Sum of lanes	2032			✓		Normal	
	2			✓	132.01	✓	Sum of lanes	2124			✓		Normal	
Cx	1	(untitled)		✓	266.10								Normal	
D	2	(untitled)			500.00	✓	Sum of lanes	2209			✓		Normal	
	3			✓	51.57	✓	Sum of lanes	2144	✓	1800	✓		Normal	
Dx	1	(untitled)		✓	215.92								Normal	
D-1	1	(untitled)		✓	52.09	✓	Sum of lanes	1990			✓	✓	Normal	
9	1			✓	82.02	✓	Sum of lanes	2059					Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	28	42.06	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	35.52		2120
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	21	39.22	✓	2042
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	70.68		2163
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	23	26.29	✓	2032
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	37.44		2124
Cx	1	1	(untitled)											
D	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00		2209
	3	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	49.21		2144
Dx	1	1	(untitled)											
D-1	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	43.60	✓	1990
9	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00	✓	2059

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
A	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Ax	1	NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Cx	1	NetworkDefault	100	100	100		0.00		
D	2	NetworkDefault	100	100	100		0.00		
	3	Flare	100	100	100		0.00		
Dx	1	NetworkDefault	100	100	100		0.00		
D-1	1	NetworkDefault	100	100	100		0.00		
9	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	539	539
	2	237	237
Ax	1	500	500
B	1	736	736
	2	101	101
Bx	1	1196	1196
C	1	313	313
	2	159	159
Cx	1	618	618
D	2	885	885
	3	73	73
Dx	1	886	886
D-1	1	157	157
9	1	1115	1115

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	E	
	2	1	D	
B	1	1	G	
	2	1	F	
C	1	1	I	
	2	1	H	
D	2	1	B	
	3	1	A	
D-1	1	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	12.44	30.00
	2	12.44	30.00
B	1	13.48	30.00
	2	13.48	30.00
C	1	16.06	30.00
	2	15.84	30.00
9	1	9.84	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	25.56	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	28.06	30.00	✓	Nearside	42.06
Cx	1	1	A/1	Cx/1	31.93	30.00	✓	Straight	Straight Movement
D	2	1	9/1	D/2	60.00	30.00	✓	Straight	Straight Movement
	3	1	9/1	D/3	6.19	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	25.91	30.00	✓	Nearside	26.29
D-1	1	1	9/1	D-1/1	6.25	30.00	✓	Straight	Straight Movement
Ax	1	2	D-1/1	Ax/1	25.56	30.00	✓	Nearside	43.60
Bx	1	2	C/2	Bx/1	28.06	30.00	✓	Offside	37.44
Cx	1	2	B/1	Cx/1	31.93	30.00	✓	Nearside	39.22
Dx	1	2	B/1	Dx/1	25.91	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	25.56	30.00	✓	Offside	70.68
Bx	1	3	D/2	Bx/1	28.06	30.00	✓	Straight	Straight Movement
Cx	1	3	D/3	Cx/1	31.93	30.00	✓	Offside	49.21
Dx	1	3	A/2	Dx/1	25.91	30.00	✓	Offside	35.52

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
D-1	1	AllTraffic		

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	18.00	12.00	5.40
2	(untitled)		1		Farside	16.00	10.67	5.40
3	(untitled)		1		Farside	16.00	10.67	5.40
4	(untitled)		1		Farside	15.00	10.00	5.40
5	(untitled)				Farside	6.00	4.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	N	
3	1	L	
4	1	J	
5	1	K	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Pedestrian Crossing Connectors

Pedestrian Crossing Connectors

Pedestrian crossing connector	Pedestrian crossing1	Pedestrian crossing2	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	5:1	3:1	3.00	2.00	5.40
2	5:1	4:2	3.00	2.00	5.40

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	71	242	159	0	0	0	0
	2	73	0	157	885	0	0	0	0
	3	387	237	0	152	0	0	0	0
	4	158	578	101	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	9/1	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	5:2E	5:2X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	71
	2		1	3	C/1, Ax/1	Normal	242
	9		3	4	A/1, Bx/1	Normal	152
	10		3	1	A/1, Cx/1	Normal	387
	11		4	2	B/1, Dx/1	Normal	578
	13		4	1	B/1, Cx/1	Normal	158
	16		2	4	9/1, D/2, Bx/1	Normal	885
	17		2	3	9/1, D-1/1, Ax/1	Normal	157
	19		4	3	B/2, Ax/1	Normal	101
	20		3	2	A/2, Dx/1	Normal	237
	38		1	4	C/2, Bx/1	Normal	159
	39		2	1	9/1, D/3, Cx/1	Normal	73

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	14		7	5	5:2E, 5:1X, 3:1E, 3:2X	Normal	50
	15		7	8	5:2E, 5:1X, 4:2E, 4:1X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	36		8	7	4:1E, 4:2X, 5:1E, 5:2X	Normal	50
	37		5	7	3:2E, 3:1X, 5:1E, 5:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	0	0	Unknown	
	B	(untitled)	5	300	0	0	Unknown	
	C	(untitled)	5	300	0	0	Unknown	
	D	(untitled)	5	300	0	0	Unknown	
	E	(untitled)	22	300	0	0	Unknown	
	F	(untitled)	5	300	0	0	Unknown	
	G	(untitled)	27	27	0	0	Unknown	
	H	(untitled)	5	300	0	0	Unknown	
	I	(untitled)	5	300	0	0	Unknown	
	J	(untitled)	5	300	0	0	Pedestrian	0
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, L	1
	2	A, B, K, L	1
	3	A, C, L, M	1
	4	A, F, K	1
	5	A, K, L, M	1
	6	B, C, G, L	1
	7	B, C, L, N	1
	8	B, G, K, L	1
	9	B, K, L, N	1
	10	C, D, E	1
	11	C, D, H	1
	12	C, D, M, N	1
	13	C, E, J	1
	14	C, H, J, L	1
	15	C, J, L, M, N	1
	16	D, E, K	1
	17	D, H, K	1
	18	D, K, M, N	1
	19	E, I, K	1
	20	E, J, K	1
	21	F, G, K	1
	22	F, J, K, N	1
	23	H, I, K	1
	24	H, J, K, L	1
	25	I, K, M	1
	26	J, K, L, M, N	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 10, 4, 6, 15, 23	18, 49, 59, 91, 101, 117
	2	(untitled)	Single	1, 10, 4, 6, 23, 15	16, 44, 68, 94, 122, 147
	3	(untitled)	Single	1, 10, 4, 6, 23, 26	16, 44, 68, 94, 122, 147
	4	(untitled)	Single	1, 10, 4, 6, 26, 23	16, 44, 68, 94, 120, 149
	5	(untitled)	Single	1, 10, 4, 6, 11, 15, 19	12, 36, 56, 78, 102, 124, 149
	6	(untitled)	Single	1, 10, 4, 6, 11, 15, 23	12, 36, 56, 78, 102, 124, 149
	7	(untitled)	Single	1, 10, 4, 6, 11, 15, 25	12, 36, 56, 78, 102, 124, 147
	8	(untitled)	Single	1, 10, 4, 6, 11, 19, 15	13, 38, 58, 80, 104, 125, 147
	9	(untitled)	Single	1, 10, 4, 6, 11, 19, 26	13, 38, 58, 80, 104, 125, 147
	10	(untitled)	Single	1, 10, 4, 6, 11, 22, 25	12, 36, 56, 78, 101, 124, 147

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5		5	5	5	5				0
	B				5	5	5		5	5	5			0	
	C						5			5		5			
	D	5	5				5	5		5	5		5		
	E	5	5				5	5	5				5	5	0
	F		5	5	5	5			5	5			0	5	
	G	5			5	5			5	5	0			5	5
	H	5	5			5	5	5						0	5
	I	5	5	5	5		5	5			5		0		5
	J	5	5		5			5		5					
	K			5											
	L				5	5	5			5					
	M		5			5	5	5	5						
	N	5				5		5	5	5					

Banned Stage transitions for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1																										
	2																										
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										
	13																										
	14																										
	15																										
	16																										
	17																										
	18																										
	19																										
	20																										
	21																										
	22																										
	23																										
	24																										
	25																										
	26																										

Interstage Matrix for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1	0	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	2	5	0	5	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	3	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	4	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	6	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	7	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	8	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	9	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	11	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	12	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	13	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5
	14	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5
	15	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5
	16	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5
	17	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	18	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	19	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5
	20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5
	21	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5
	22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5
	23	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5
	24	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5
	25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5
	26	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	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	A,B,C,L	2	18	16	1	5
	2	✓	10	C,D,E	23	49	26	1	22
	3	✓	4	A,F,K	54	59	5	1	5
	4	✓	6	B,C,G,L	64	91	27	1	27
	5	✓	15	C,J,L,M,N	96	101	5	1	5
	6	✓	23	H,I,K	106	117	11	1	5

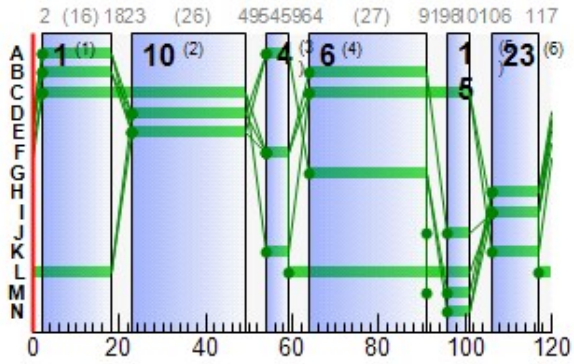
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	54	59	5
		2	✓	2	18	16
	B	1	✓	64	91	27
		2	✓	2	18	16
	C	1	✓	64	101	37
		2	✓	2	49	47
	D	1	✓	23	49	26
	E	1	✓	23	49	26
	F	1	✓	54	59	5
	G	1	✓	64	91	27
	H	1	✓	106	117	11
	I	1	✓	106	117	11
	J	1	✓	96	101	5
	K	1	✓	54	59	5
		2	✓	106	117	11
	L	1	✓	59	101	42
		2	✓	117	18	21
	M	1	✓	96	101	5
	N	1	✓	96	101	5

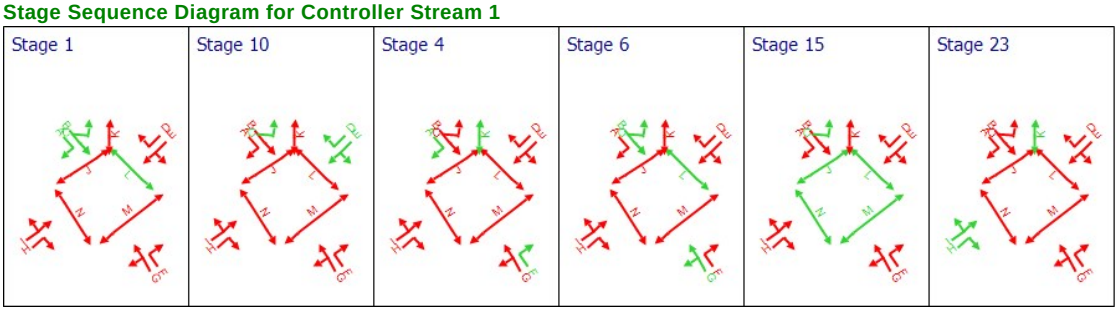
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1			Green Period 2		
					Start	End	Duration	Start	End	Duration
A	1	1	1	E	23	49	26			
A	2	1	1	D	23	49	26			
B	1	1	1	G	64	91	27			
B	2	1	1	F	54	59	5			
C	1	1	1	I	106	117	11			
C	2	1	1	H	106	117	11			
D	2	1	1	B	64	91	27	2	18	16
D	3	1	1	A	54	59	5	2	18	16
D-1	1	1	1	C	64	101	37	2	49	47

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)
08:00-09:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	E	539	2038	26	459	118	-23	325.69	58.00	321.61	338.13
		2		D	237	2120	26	477	50	81	44.28	7.09	39.32	56.73
	Ax	1	(untitled)		415	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.56
	B	1	(untitled)	G	736	2042	27	476	154	-42	668.93	146.42	749.63	682.41
		2		F	101	2163	5	108	93	-4	167.59	6.45	33.00	181.07
	Bx	1	(untitled)		1117	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	28.06
	C	1	(untitled)	I	313	2032	11	203	154	-42	676.78	62.51	268.60	692.84
		2		H	159	2124	11	212	75	20	76.19	6.17	26.86	92.03
	Cx	1	(untitled)		505	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	31.93
	D	2	(untitled)	B	885	2209	43	828	107	-16	158.30	51.15	58.82	218.30
		3		A	73	2144	21	411	18	407	22.85	1.47	16.37	29.04
	Dx	1	(untitled)		657	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.91
	D-1	1	(untitled)	C	157	1990	84	1426	11	718	2.87	0.92	10.18	9.12
	9	1			1115	2059	120	2059	54	66	1.03	0.32	2.24	10.87

Data Entry - Stage Start and End

Resultant Stage

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,C,L	2	18	16	1	5
	2	✓	10	C,D,E	23	49	26	1	22
	3	✓	4	A,F,K	54	59	5	1	5
	4	✓	6	B,C,G,L	64	91	27	1	27
	5	✓	15	C,J,L,M,N	96	101	5	1	5
	6	✓	23	H,I,K	106	117	11	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	0	0	Unknown
	B	B	5	300	0	0	Unknown
	C	C	5	300	0	0	Unknown
	D	D	5	300	0	0	Unknown
	E	E	22	300	0	0	Unknown
	F	F	5	300	0	0	Unknown
	G	G	27	27	0	0	Unknown
	H	H	5	300	0	0	Unknown
	I	I	5	300	0	0	Unknown
	J	J	5	300	0	0	Pedestrian
	K	K	5	300	0	0	Pedestrian
	L	L	5	300	0	0	Pedestrian
	M	M	5	300	0	0	Pedestrian
	N	N	5	300	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2120	100	100
Ax	1	✓	213.03	NetworkDefault	0.00	Normal						100	100
B	1	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2042	100	100
	2	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2163	100	100
Bx	1	✓	233.82	NetworkDefault	0.00	Normal						100	100
C	1	✓	133.82	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2032	100	100
	2	✓	132.01	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2124	100	100
Cx	1	✓	266.10	NetworkDefault	0.00	Normal						100	100
D	2		500.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2209	100	100
	3	✓	51.57	Flare	0.00	Normal	✓	✓		Sum of lanes	2144	100	100
Dx	1	✓	215.92	NetworkDefault	0.00	Normal						100	100
D-1	1	✓	52.09	NetworkDefault	0.00	Normal	✓	✓	✓	Sum of lanes	1990	100	100
9	1	✓	82.02	NetworkDefault	0.00	Normal	✓			Sum of lanes	2059	100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
08:00-09:00	1	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	2	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	3	1	50	1	63	2.08	0.72
		2	50	1	63	8.31	0.57
	4	1	50	11	5	55.58	1.60
		2	50	11	5	68.33	1.67
	5	1	100	7	16	14.20	1.04
		2	100	7	16	23.18	1.58

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	118	-23	539	2038	26	325.69	58.00	321.61	692.44	15.16	707.60
		2	50	81	237	2120	26	44.28	7.09	39.32	41.40	2.64	44.03
	Ax	1	0	Unrestricted	415	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	154	-42	736	2042	27	668.93	146.42	749.63	1941.99	23.14	1965.13
		2	93	-4	101	2163	5	167.59	6.45	33.00	66.77	2.18	68.95
	Bx	1	0	Unrestricted	1117	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	154	-42	313	2032	11	676.78	62.51	268.60	835.56	9.86	845.42
		2	75	20	159	2124	11	76.19	6.17	26.86	47.79	2.28	50.07
	Cx	1	0	Unrestricted	505	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	107	-16	885	2209	43	158.30	51.15	58.82	552.59	20.13	572.71
		3	18	407	73	2144	21	22.85	1.47	16.37	6.58	0.75	7.33
	Dx	1	0	Unrestricted	657	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	11	718	157	1990	84	2.87	0.92	10.18	1.78	0.55	2.33
	9	1	54	66	1115	2059	120	1.03	0.32	2.24	4.53	0.00	4.53

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	539	459	0		2038	459	118	✓	-23	0.00	26
		2	237	237	0		2120	477	50		81	0.00	26
	Ax	1	415	415	85	✓	Unrestricted	Unrestricted	0		Unrestricted	0.65	120
	B	1	736	476	0		2042	476	154	✓	-42	0.00	27
		2	101	101	0		2163	108	93	✓	-4	0.00	5
	Bx	1	1117	1117	79	✓	Unrestricted	Unrestricted	0		Unrestricted	0.45	120
	C	1	313	203	0		2032	203	154	✓	-42	0.00	11
		2	159	159	0		2124	212	75		20	0.00	11
	Cx	1	505	505	113	✓	Unrestricted	Unrestricted	0		Unrestricted	0.64	120
	D	2	885	828	0		2209	828	107	✓	-16	0.00	43
		3	73	73	0		2144	411	18		407	0.00	21
	Dx	1	657	657	229	✓	Unrestricted	Unrestricted	0		Unrestricted	0.70	120
	D-1	1	157	157	0		1990	1426	11		718	0.00	84
	9	1	1115	1115	0		2059	2059	54		66	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	12.44	325.69	5.92	42.84	692.44	263.73	458.55	750.77	15.16
		2	12.44	44.28	2.67	0.24	41.40	88.70	202.96	7.26	2.64
	Ax	1	25.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	13.48	668.93	6.09	130.67	1941.99	387.40	476.47	1369.36	23.14
		2	13.48	167.59	1.59	3.11	66.77	172.12	99.16	74.68	2.18
	Bx	1	28.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16.06	676.78	3.05	55.79	835.56	386.82	203.20	582.82	9.86
		2	15.84	76.19	2.32	1.04	47.79	114.45	152.13	29.84	2.28
	Cx	1	31.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	60.00	158.30	4.72	34.20	552.59	193.77	826.55	778.60	20.13
		3	6.19	22.85	0.44	0.02	6.58	82.40	59.01	1.15	0.75
	Dx	1	25.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	6.25	2.87	0.12	0.01	1.78	28.07	43.67	0.41	0.55
	9	1	9.84	1.03	0.00	0.32	4.53	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	58.00	18.03	321.61	32.39	0.00	0.00	0.00	0.00	0.00	
		2	0.00	7.09	18.03	39.32	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	37.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	B	1	0.00	146.42	19.53	749.63	119.01	0.00	0.00	0.00	0.00	0.00	
		2	0.00	6.45	19.53	33.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	40.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	C	1	0.00	62.51	23.27	268.60	35.88	0.00	0.00	0.00	0.00	0.00	
		2	0.00	6.17	22.96	26.86	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	46.28	0.00	0.00	0.00	0.00	12.00	0.00	12.00	
	D	2	0.00	51.15	86.96	58.82	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	1.47	8.97	16.37	0.00	0.00	0.00	0.00	0.00	0.00	
	Dx	1	0.00	0.00	37.55	0.00	0.00	0.00	0.00	10.00	0.00	10.00	
	D-1	1	0.00	0.92	9.06	10.18	0.00	0.00	0.00	0.00	0.00	0.00	
	9	1	0.00	0.32	14.26	2.24	0.00	0.00	0.00	0.00	0.00	0.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	55.89	50.63	1.10	338.13
		2	24.58	3.73	6.58	56.73
	Ax	1	88.43	2.95	30.00	25.56
	B	1	82.66	139.51	0.59	682.41
		2	11.34	5.08	2.23	181.07
	Bx	1	261.10	8.70	30.00	28.06
	C	1	41.89	60.24	0.70	692.84
		2	20.99	4.06	5.16	92.03
	Cx	1	134.25	4.48	30.00	31.93
	D	2	442.50	53.66	8.25	218.30
		3	3.76	0.59	6.39	29.04
	Dx	1	141.92	4.73	30.00	25.91
	D-1	1	8.18	0.40	20.56	9.12
	9	1	91.45	3.37	27.16	10.87

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	98.33	83.17	95.02	1.00	0.00	707.60
		2	0.00	0.00	✓	7.09	0.24	6.37	1.00	0.00	44.03
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	276.19	260.44	272.62	1.00	0.00	1965.13
		2	0.00	0.00	✓	7.27	3.93	7.13	1.00	0.00	68.95
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	117.43	110.71	116.81	1.00	0.00	845.42
		2	0.00	0.00	✓	6.20	1.08	5.85	1.00	0.00	50.07
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	2	0.00	0.00	✓	80.04	63.47	73.83	1.00	0.00	572.71
		3	0.00	0.00	✓	1.47	0.02	1.28	1.00	0.00	7.33
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D-1	1	0.00	0.00	✓	0.92	0.01	0.88	1.00	0.00	2.33
	9	1	0.00	0.00	✓	0.32			1.00	0.00	4.53

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	2	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	3	1	1	50	11000	63	2.08	0.72	0.41	0.41
		2	1	50	11000	63	8.31	0.57	1.64	1.64
	4	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	68.33	1.67	13.48	13.48
	5	1	7	100	11000	16	14.20	1.04	5.60	5.60
		2	7	100	11000	16	23.18	1.58	9.14	9.14

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	1	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	2	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	3	1	50	50	0		11000	5775	1		10295	1.73	63
		2	50	50	0		11000	5775	1		10295	0.00	63
	4	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	1.73	5
	5	1	100	100	0		11000	1467	7		1220	1.42	16
		2	100	100	0		11000	1467	7		1220	0.00	16

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	13.00	55.58	0.77	0.00	10.96
		2	13.00	55.58	0.77	0.00	10.96
	2	1	11.67	55.58	0.77	0.00	10.96
		2	11.67	55.58	0.77	0.00	10.96
	3	1	12.67	2.08	0.03	0.00	0.41
		2	11.67	8.31	0.12	0.00	1.64
	4	1	11.00	55.58	0.77	0.00	10.96
		2	12.00	68.33	0.95	0.00	13.48
	5	1	6.00	14.20	0.39	0.00	5.60
		2	5.00	23.18	0.64	0.00	9.14

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	1	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	2	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	3	1	0.72	10.00	7.22	0.00	0.00	0.00
		2	0.57	10.00	5.69	0.00	0.00	0.00
	4	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.67	10.00	16.67	0.00	0.00	0.00
	5	1	1.04	10.00	10.42	0.00	0.00	0.00
		2	1.58	10.00	15.83	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	1	1	0.95	0.95	1.00	68.58
		2	0.95	0.95	1.00	68.58
	2	1	0.85	0.93	0.91	67.25
		2	0.85	0.93	0.91	67.25
	3	1	0.95	0.20	4.64	14.75
		2	0.85	0.28	3.06	19.98
	4	1	0.80	0.92	0.87	66.58
		2	0.90	1.12	0.81	80.33
	5	1	0.90	0.56	1.60	20.20
		2	0.70	0.78	0.89	28.18

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	2	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	3	1	0.00	0.00	0.72	1.00	0.00	0.41
		2	0.00	0.00	0.57	1.00	0.00	1.64
	4	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.67	1.00	0.00	13.48
	5	1	0.00	0.00	1.04	1.00	0.00	5.60
		2	0.00	0.00	1.58	1.00	0.00	9.14

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:56:14	01/04/2022 13:56:15	08:00	120	4353.18	301.16	154.47	B/1	5	21	B/1	9/1	B/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	154	-42	7009	854	151.62	4191.41	76.69	4268.11

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	11	600	188	35.95	85.08	85.08

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	7609	7102	506	✓	154	✓	-42	1042

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	23.00	142.49	32.92	268.24	4276.49	103.42	2521.70	3594.88	76.69

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	749.63	0.00	22.00	0.00	22.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	1417.64	349.77	4.05

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	4353.18

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	718.8	718.4	120.1	0.0	0.0	0.0	0.0
	2	71.8	0.0	45.6	257.2	0.0	0.0	0.0	0.0
	3	370.1	82.6	0.0	366.2	0.0	0.0	0.0	0.0
	4	714.3	708.3	206.6	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	68.6	40.2	0.0
	6	0.0	0.0	0.0	0.0	68.6	0.0	0.0	67.3
	7	0.0	0.0	0.0	0.0	42.9	0.0	0.0	108.5
	8	0.0	0.0	0.0	0.0	0.0	67.3	86.8	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	71		718.75		71	718.75
2	1	3	242		718.41		242	718.41
9	3	4	152		366.19		152	366.19
10	3	1	387		370.07		387	370.07
11	4	2	578		708.32		578	708.32
13	4	1	158		714.34		158	714.34
14	7	5		50		42.93	50	42.93
15	7	8		50		108.50	50	108.50
16	2	4	885		257.23		885	257.23
17	2	3	157		45.56		157	45.56
18	8	6		50		67.25	50	67.25
19	4	3	101		206.63		101	206.63
20	3	2	237		82.64		237	82.64
23	5	6		50		68.58	50	68.58
34	6	8		50		67.25	50	67.25
35	6	5		50		68.58	50	68.58
36	8	7		50		86.78	50	86.78
37	5	7		50		40.17	50	40.17
38	1	4	159		120.09		159	120.09
39	2	1	73		71.84		73	71.84

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)
A	1	(untitled)	1	1	E	539 <	2038	26	0.00	118	-23	338.13	325.69	263.73	58.00 +
	2		1	1	D	237	2120	26	0.00	50	81	56.73	44.28	88.70	7.09
Ax	1	(untitled)				415	Unrestricted	120	0.00	0	Unrestricted	25.56	0.00	0.00	0.00
B	1	(untitled)	1	1	G	736 <	2042	27	0.00	154	-42	682.41	668.93	387.40	146.42 +
	2		1	1	F	101	2163	5	0.00	93	-4	181.07	167.59	172.12	6.45
Bx	1	(untitled)				1117	Unrestricted	120	0.00	0	Unrestricted	28.06	0.00	0.00	0.00
C	1	(untitled)	1	1	I	313 <	2032	11	0.00	154	-42	692.84	676.78	386.82	62.51 +
	2		1	1	H	159	2124	11	0.00	75	20	92.03	76.19	114.45	6.17
Cx	1	(untitled)				505	Unrestricted	120	12.00	0	Unrestricted	31.93	0.00	0.00	0.00
D	2	(untitled)	1	1	B	885	2209	43	0.00	107	-16	218.30	158.30	193.77	51.15
	3		1	1	A	73	2144	21	0.00	18	407	29.04	22.85	82.40	1.47
Dx	1	(untitled)				657	Unrestricted	120	10.00	0	Unrestricted	25.91	0.00	0.00	0.00
D-1	1	(untitled)	1	1	C	157	1990	84	0.00	11	718	9.12	2.87	28.07	0.92
9	1		1			1115	2059	120	0.00	54	66	10.87	1.03	0.00	0.32

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
	2	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
2	1	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
	2	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
3	1	(untitled)	1	1	L	50	11000	63	1	10295	14.75	2.08	0.72	100	0
	2	(untitled)	1	1	L	50	11000	63	1	10295	19.98	8.31	0.57	100	0
4	1	(untitled)	1	1	J	50	11000	5	11	725	66.58	55.58	1.60	100	0
	2	(untitled)	1	1	J	50	11000	5	11	725	80.33	68.33	1.67	100	0
5	1	(untitled)		1	K	100	11000	16	7	1220	20.20	14.20	1.04	100	0
	2	(untitled)		1	K	100	11000	16	7	1220	28.18	23.18	1.58	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	1408.94	342.13	4.12	26.93	268.24	4191.41	76.69	0.00	4268.11
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	8.70	7.64	1.14	5.99	0.00	85.08	0.00	0.00	85.08
TOTAL	1417.64	349.77	4.05	32.92	268.24	4276.49	76.69	0.00	4353.18

< = 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 15

Filename: Junction 3 - PM.t16
Path: M:\Projects\17\17-144\Design\Traffic\Junction Modelling\MODELLING MAY 2021\Junction 3
Report generation date: 01/04/2022 13:59:05

»A1 - 2022 : D1 - 2022, PM* :
»A2 - 2025 : D2 - 2025, PM* :
»A3 - 2025 + LAP Developments : D3 - 2025 + LAP Developments, PM* :

File summary

File description

File title	17-144 Oldtown Planning 05
Location	
Site number	
UTCRegion	
Driving side	Left
Date	06/12/2011
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	17-144
Enumerator	DOMAIN\f.silva
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	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
			✓		✓		✓	✓					

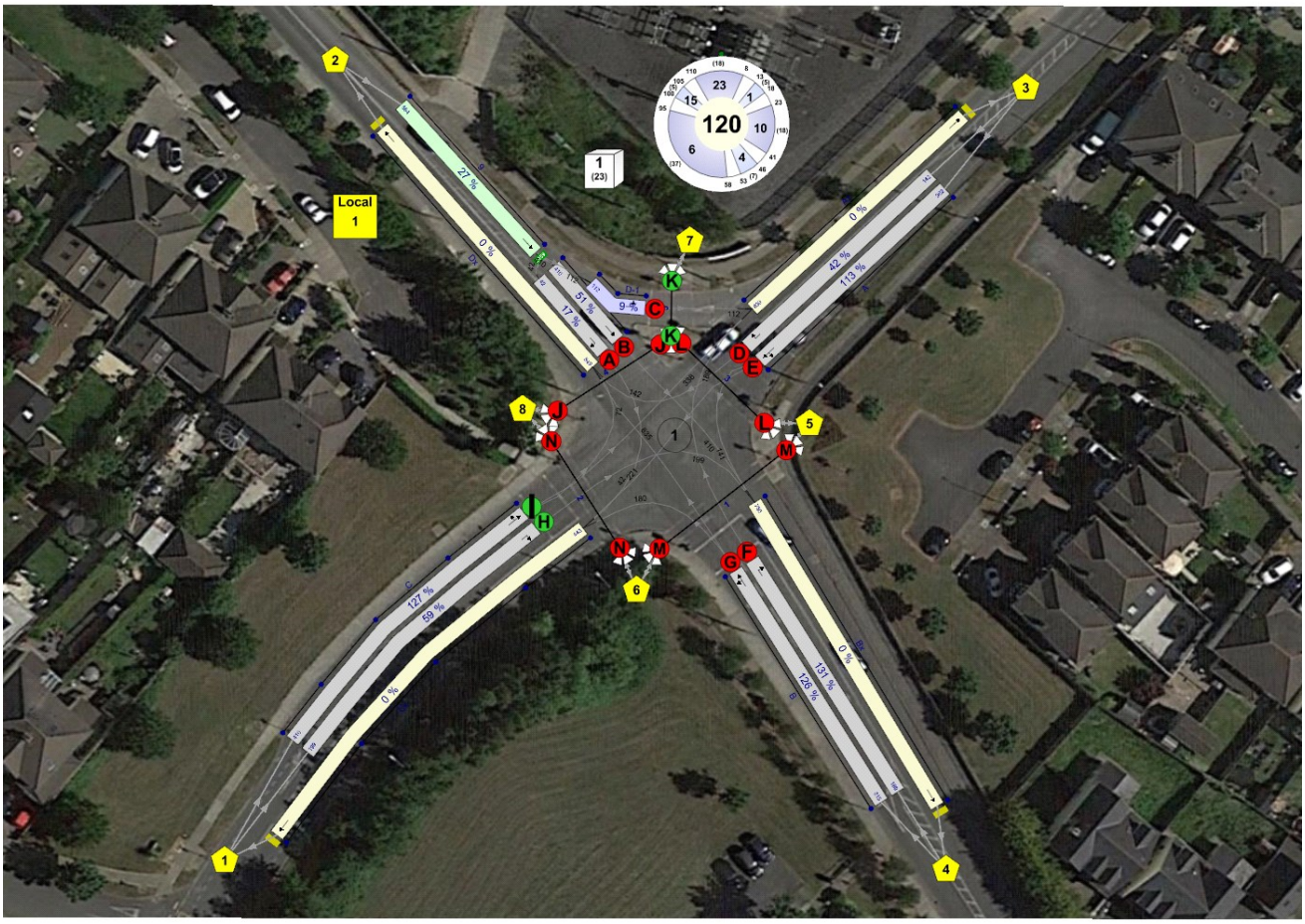
Units

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	Veh	Veh	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	✓

Network Diagrams



17-144 Oldtown Planning 05
Diagram produced using TRANSYT 15.5.2.7994

A1 - 2022
D1 - 2022, PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
1	01/04/2022 13:58:47	01/04/2022 13:58:48	17:00	120	812.44	54.95	98.00	A/1	4	17	A/1	9/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2022		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2022, PM	(untitled)			17:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
D-1	(untitled)		1
9			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	103.69	✓	Sum of lanes	2030			✓		Normal	
	2			✓	103.69	✓	Sum of lanes	2120			✓		Normal	
Ax	1	(untitled)		✓	213.03								Normal	
B	1	(untitled)		✓	112.31	✓	Sum of lanes	2036			✓		Normal	
	2			✓	112.31	✓	Sum of lanes	2163			✓		Normal	
Bx	1	(untitled)		✓	233.82								Normal	
C	1	(untitled)		✓	133.82	✓	Sum of lanes	2049			✓		Normal	
	2			✓	132.01	✓	Sum of lanes	2124			✓		Normal	
Cx	1	(untitled)		✓	266.10								Normal	
D	2	(untitled)			500.00	✓	Sum of lanes	2209			✓		Normal	
	3			✓	51.57	✓	Sum of lanes	2144	✓	1800	✓		Normal	
Dx	1	(untitled)		✓	215.92								Normal	
D-1	1	(untitled)		✓	52.09	✓	Sum of lanes	1990			✓	✓	Normal	
9	1			✓	82.02	✓	Sum of lanes	2059					Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	40	42.06	✓	2030
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	35.52		2120
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	29	39.22	✓	2036
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	70.68		2163
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	8	26.29	✓	2049
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	37.44		2124
Cx	1	1	(untitled)											
D	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00		2209
	3	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	49.21		2144
Dx	1	1	(untitled)											
D-1	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	43.60	✓	1990
9	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00	✓	2059

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
A	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Ax	1	NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Cx	1	NetworkDefault	100	100	100		0.00		
D	2	NetworkDefault	100	100	100		0.00		
	3	Flare	100	100	100		0.00		
Dx	1	NetworkDefault	100	100	100		0.00		
D-1	1	NetworkDefault	100	100	100		0.00		
9	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	315	315
	2	124	124
Ax	1	555	555
B	1	594	594
	2	164	164
Bx	1	593	593
C	1	315	315
	2	190	190
Cx	1	393	393
D	2	278	278
	3	31	31
Dx	1	571	571
D-1	1	101	101
9	1	410	410

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	E	
	2	1	D	
B	1	1	G	
	2	1	F	
C	1	1	I	
	2	1	H	
D	2	1	B	
	3	1	A	
D-1	1	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	12.44	30.00
	2	12.44	30.00
B	1	13.48	30.00
	2	13.48	30.00
C	1	16.06	30.00
	2	15.84	30.00
9	1	9.84	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	25.56	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	28.06	30.00	✓	Nearside	42.06
Cx	1	1	A/1	Cx/1	31.93	30.00	✓	Straight	Straight Movement
D	2	1	9/1	D/2	60.00	30.00	✓	Straight	Straight Movement
	3	1	9/1	D/3	6.19	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	25.91	30.00	✓	Nearside	26.29
D-1	1	1	9/1	D-1/1	6.25	30.00	✓	Straight	Straight Movement
Ax	1	2	D-1/1	Ax/1	25.56	30.00	✓	Nearside	43.60
Bx	1	2	C/2	Bx/1	28.06	30.00	✓	Offside	37.44
Cx	1	2	B/1	Cx/1	31.93	30.00	✓	Nearside	39.22
Dx	1	2	B/1	Dx/1	25.91	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	25.56	30.00	✓	Offside	70.68
Bx	1	3	D/2	Bx/1	28.06	30.00	✓	Straight	Straight Movement
Cx	1	3	D/3	Cx/1	31.93	30.00	✓	Offside	49.21
Dx	1	3	A/2	Dx/1	25.91	30.00	✓	Offside	35.52

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
D-1	1	AllTraffic		

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	18.00	12.00	5.40
2	(untitled)		1		Farside	16.00	10.67	5.40
3	(untitled)		1		Farside	16.00	10.67	5.40
4	(untitled)		1		Farside	15.00	10.00	5.40
5	(untitled)				Farside	6.00	4.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	N	
3	1	L	
4	1	J	
5	1	K	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Pedestrian Crossing Connectors

Pedestrian Crossing Connectors

Pedestrian crossing connector	Pedestrian crossing1	Pedestrian crossing2	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	5:1	3:1	3.00	2.00	5.40
2	5:1	4:2	3.00	2.00	5.40

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	25	290	190	0	0	0	0
	2	31	0	101	278	0	0	0	0
	3	190	124	0	125	0	0	0	0
	4	172	422	164	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	9/1	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	5:2E	5:2X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	25
	2		1	3	C/1, Ax/1	Normal	290
	9		3	4	A/1, Bx/1	Normal	125
	10		3	1	A/1, Cx/1	Normal	190
	11		4	2	B/1, Dx/1	Normal	422
	13		4	1	B/1, Cx/1	Normal	172
	16		2	4	9/1, D/2, Bx/1	Normal	278
	17		2	3	9/1, D-1/1, Ax/1	Normal	101
	19		4	3	B/2, Ax/1	Normal	164
	20		3	2	A/2, Dx/1	Normal	124
	38		1	4	C/2, Bx/1	Normal	190
	39		2	1	9/1, D/3, Cx/1	Normal	31

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	14		7	5	5:2E, 5:1X, 3:1E, 3:2X	Normal	50
	15		7	8	5:2E, 5:1X, 4:2E, 4:1X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	36		8	7	4:1E, 4:2X, 5:1E, 5:2X	Normal	50
	37		5	7	3:2E, 3:1X, 5:1E, 5:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	0	0	Unknown	
	B	(untitled)	5	300	0	0	Unknown	
	C	(untitled)	5	300	0	0	Unknown	
	D	(untitled)	5	300	0	0	Unknown	
	E	(untitled)	18	18	0	0	Unknown	
	F	(untitled)	5	300	0	0	Unknown	
	G	(untitled)	27	300	0	0	Unknown	
	H	(untitled)	5	300	0	0	Unknown	
	I	(untitled)	5	300	0	0	Unknown	
	J	(untitled)	5	300	0	0	Pedestrian	0
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, L	1
	2	A, B, K, L	1
	3	A, C, L, M	1
	4	A, F, K	1
	5	A, K, L, M	1
	6	B, C, G, L	1
	7	B, C, L, N	1
	8	B, G, K, L	1
	9	B, K, L, N	1
	10	C, D, E	1
	11	C, D, H	1
	12	C, D, M, N	1
	13	C, E, J	1
	14	C, H, J, L	1
	15	C, J, L, M, N	1
	16	D, E, K	1
	17	D, H, K	1
	18	D, K, M, N	1
	19	E, I, K	1
	20	E, J, K	1
	21	F, G, K	1
	22	F, J, K, N	1
	23	H, I, K	1
	24	H, J, K, L	1
	25	I, K, M	1
	26	J, K, L, M, N	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 10, 4, 6, 15, 23	18, 41, 55, 95, 105, 8
	2	(untitled)	Single	1, 10, 4, 6, 23, 15	16, 44, 68, 94, 122, 147
	3	(untitled)	Single	1, 10, 4, 6, 23, 26	16, 44, 68, 94, 122, 147
	4	(untitled)	Single	1, 10, 4, 6, 26, 23	16, 44, 68, 94, 120, 149
	5	(untitled)	Single	1, 10, 4, 6, 11, 15, 19	12, 36, 56, 78, 102, 124, 149
	6	(untitled)	Single	1, 10, 4, 6, 11, 15, 23	12, 36, 56, 78, 102, 124, 149
	7	(untitled)	Single	1, 10, 4, 6, 11, 15, 25	12, 36, 56, 78, 102, 124, 147
	8	(untitled)	Single	1, 10, 4, 6, 11, 19, 15	13, 38, 58, 80, 104, 125, 147
	9	(untitled)	Single	1, 10, 4, 6, 11, 19, 26	13, 38, 58, 80, 104, 125, 147
	10	(untitled)	Single	1, 10, 4, 6, 11, 22, 25	12, 36, 56, 78, 101, 124, 147

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5		5	5	5	5				0
	B				5	5	5		5	5	5			0	
	C						5			5		5			
	D	5	5				5	5		5	5		5		
	E	5	5				5	5	5				5	5	0
	F		5	5	5	5			5	5			0	5	
	G	5			5	5			5	5	0			5	5
	H	5	5			5	5	5						0	5
	I	5	5	5	5		5	5			5		0		5
	J	5	5		5			5		5					
	K			5											
	L				5	5	5			5					
	M		5			5	5	5	5						
	N	5				5		5	5	5					

Banned Stage transitions for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1																										
	2																										
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										
	13																										
	14																										
	15																										
	16																										
	17																										
	18																										
	19																										
	20																										
	21																										
	22																										
	23																										
	24																										
	25																										
	26																										

Interstage Matrix for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1	0	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	2	5	0	5	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	3	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	4	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	6	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	7	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	8	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	9	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	11	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	12	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	13	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5
	14	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5
	15	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5
	16	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5
	17	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	18	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	19	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5
	20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5
	21	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5
	22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5
	23	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5
	24	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5
	25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5
	26	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	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	A,B,C,L	13	18	5	1	5
	2	✓	10	C,D,E	23	41	18	1	18
	3	✓	4	A,F,K	46	55	9	1	5
	4	✓	6	B,C,G,L	60	95	35	1	27
	5	✓	15	C,J,L,M,N	100	105	5	1	5
	6	✓	23	H,I,K	110	8	18	1	5

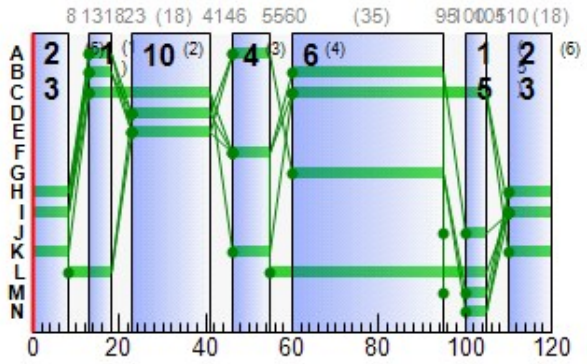
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	46	55	9
		2	✓	13	18	5
	B	1	✓	60	95	35
		2	✓	13	18	5
	C	1	✓	60	105	45
		2	✓	13	41	28
	D	1	✓	23	41	18
	E	1	✓	23	41	18
	F	1	✓	46	55	9
	G	1	✓	60	95	35
	H	1	✓	110	8	18
	I	1	✓	110	8	18
	J	1	✓	100	105	5
	K	1	✓	46	55	9
		2	✓	110	8	18
	L	1	✓	55	105	50
		2	✓	8	18	10
	M	1	✓	100	105	5
	N	1	✓	100	105	5

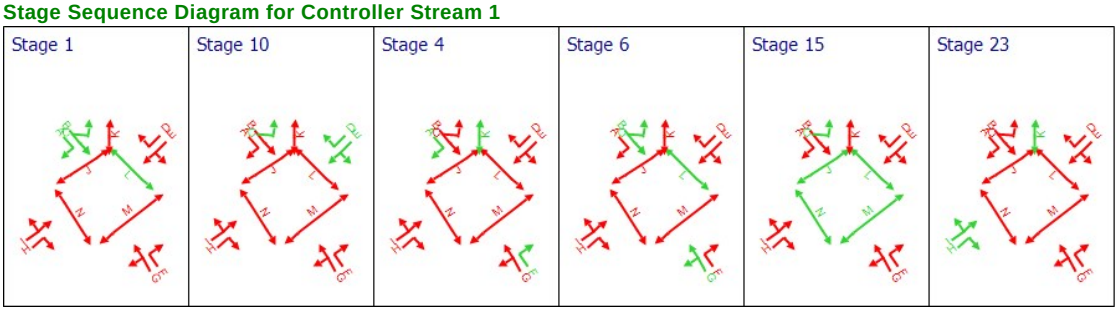
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1			Green Period 2		
					Start	End	Duration	Start	End	Duration
A	1	1	1	E	23	41	18			
A	2	1	1	D	23	41	18			
B	1	1	1	G	60	95	35			
B	2	1	1	F	46	55	9			
C	1	1	1	I	110	8	18			
C	2	1	1	H	110	8	18			
D	2	1	1	B	60	95	35	13	18	5
D	3	1	1	A	46	55	9	13	18	5
D-1	1	1	1	C	60	105	45	13	41	28

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)
17:00-18:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
17:00-18:00	A	1	(untitled)	E	315	2030	18	321	98	-8	129.69	17.36	96.25	142.14
		2		D	124	2120	18	336	37	144	48.29	3.79	21.03	60.73
	Ax	1	(untitled)		555	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.56
	B	1	(untitled)	G	594	2036	35	611	97	-7	91.31	27.69	141.75	104.79
		2		F	164	2163	9	180	91	-1	122.23	8.50	43.54	135.70
	Bx	1	(untitled)		593	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	28.06
	C	1	(untitled)	I	315	2049	18	324	97	-7	122.91	16.77	72.07	138.97
		2		H	190	2124	18	336	56	59	53.55	6.17	26.86	69.39
	Cx	1	(untitled)		393	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	31.93
	D	2	(untitled)	B	278	2209	40	773	36	150	15.85	3.65	4.20	75.85
		3		A	31	2144	14	286	11	730	29.01	1.46	16.23	35.20
	Dx	1	(untitled)		571	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.91
	D-1	1	(untitled)	C	101	1990	73	1244	8	1008	4.77	0.79	8.71	11.02
	9	1			410	2059	120	2059	20	352	0.22	0.02	0.17	10.06

Data Entry - Stage Start and End

Resultant Stage

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,C,L	13	18	5	1	5
	2	✓	10	C,D,E	23	41	18	1	18
	3	✓	4	A,F,K	46	55	9	1	5
	4	✓	6	B,C,G,L	60	95	35	1	27
	5	✓	15	C,J,L,M,N	100	105	5	1	5
	6	✓	23	H,I,K	110	8	18	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	0	0	Unknown
	B	B	5	300	0	0	Unknown
	C	C	5	300	0	0	Unknown
	D	D	5	300	0	0	Unknown
	E	E	18	18	0	0	Unknown
	F	F	5	300	0	0	Unknown
	G	G	27	300	0	0	Unknown
	H	H	5	300	0	0	Unknown
	I	I	5	300	0	0	Unknown
	J	J	5	300	0	0	Pedestrian
	K	K	5	300	0	0	Pedestrian
	L	L	5	300	0	0	Pedestrian
	M	M	5	300	0	0	Pedestrian
	N	N	5	300	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2030	100	100
	2	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2120	100	100
Ax	1	✓	213.03	NetworkDefault	0.00	Normal						100	100
B	1	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2036	100	100
	2	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2163	100	100
Bx	1	✓	233.82	NetworkDefault	0.00	Normal						100	100
C	1	✓	133.82	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2049	100	100
	2	✓	132.01	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2124	100	100
Cx	1	✓	266.10	NetworkDefault	0.00	Normal						100	100
D	2		500.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2209	100	100
	3	✓	51.57	Flare	0.00	Normal	✓	✓		Sum of lanes	2144	100	100
Dx	1	✓	215.92	NetworkDefault	0.00	Normal						100	100
D-1	1	✓	52.09	NetworkDefault	0.00	Normal	✓	✓	✓	Sum of lanes	1990	100	100
9	1	✓	82.02	NetworkDefault	0.00	Normal	✓			Sum of lanes	2059	100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
17:00-18:00	1	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	2	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	3	1	50	1	60	7.15	0.93
		2	50	1	60	8.16	0.51
	4	1	50	11	5	55.58	1.60
		2	50	11	5	80.49	1.67
	5	1	100	4	27	13.49	1.10
		2	100	4	27	19.01	1.53

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	98	-8	315	2030	18	129.69	17.36	96.25	161.14	6.10	167.24
		2	37	144	124	2120	18	48.29	3.79	21.03	23.62	1.41	25.03
	Ax	1	0	Unrestricted	555	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	97	-7	594	2036	35	91.31	27.69	141.75	213.94	10.01	223.95
		2	91	-1	164	2163	9	122.23	8.50	43.54	79.07	3.02	82.08
	Bx	1	0	Unrestricted	593	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	97	-7	315	2049	18	122.91	16.77	72.07	152.72	5.93	158.65
		2	56	59	190	2124	18	53.55	6.17	26.86	40.13	2.29	42.43
	Cx	1	0	Unrestricted	393	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	36	150	278	2209	40	15.85	3.65	4.20	17.38	2.55	19.94
		3	11	730	31	2144	14	29.01	1.46	16.23	3.55	0.34	3.89
	Dx	1	0	Unrestricted	571	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	8	1008	101	1990	73	4.77	0.79	8.71	1.90	0.46	2.36
	9	1	20	352	410	2059	120	0.22	0.02	0.17	0.35	0.00	0.35

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	315	315	0		2030	321	98	✓	-8	0.00	18
		2	124	124	0		2120	336	37		144	0.00	18
	Ax	1	555	555	0		Unrestricted	Unrestricted	0		Unrestricted	0.78	120
	B	1	594	594	0		2036	611	97	✓	-7	0.00	35
		2	164	164	0		2163	180	91	✓	-1	0.00	9
	Bx	1	593	593	0		Unrestricted	Unrestricted	0		Unrestricted	0.49	120
	C	1	315	315	0		2049	324	97	✓	-7	0.00	18
		2	190	190	0		2124	336	56		59	0.00	18
	Cx	1	393	393	0		Unrestricted	Unrestricted	0		Unrestricted	0.59	120
	D	2	278	278	0		2209	773	36		150	0.00	40
		3	31	31	0		2144	286	11		730	0.00	14
	Dx	1	571	571	0		Unrestricted	Unrestricted	0		Unrestricted	0.77	120
	D-1	1	101	101	0		1990	1244	8		1008	0.00	73
	9	1	410	410	0		2059	2059	20		352	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	12.44	129.69	4.40	6.95	161.14	154.34	308.77	177.41	6.10
		2	12.44	48.29	1.56	0.11	23.62	90.69	109.24	3.21	1.41
	Ax	1	25.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	13.48	91.31	6.85	8.22	213.94	134.38	575.58	222.61	10.01
		2	13.48	122.23	2.49	3.08	79.07	146.62	159.87	80.59	3.02
	Bx	1	28.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16.06	122.91	4.40	6.36	152.72	150.17	308.44	164.60	5.93
		2	15.84	53.55	2.46	0.36	40.13	96.32	172.29	10.71	2.29
	Cx	1	31.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	60.00	15.85	1.12	0.10	17.38	73.28	197.70	6.01	2.55
		3	6.19	29.01	0.24	0.01	3.55	87.94	26.87	0.39	0.34
	Dx	1	25.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	6.25	4.77	0.13	0.00	1.90	36.57	36.72	0.22	0.46
	9	1	9.84	0.22	0.00	0.02	0.35	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	17.36	18.03	96.25	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	3.79	18.03	21.03	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	37.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	B	1	0.00	27.69	19.53	141.75	1.71	0.00	0.00	0.00	0.00	0.00	
		2	0.00	8.50	19.53	43.54	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	40.66	0.00	0.00	0.00	0.00	1.00	0.00	1.00	
	C	1	0.00	16.77	23.27	72.07	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	6.17	22.96	26.86	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	46.28	0.00	0.00	0.00	0.00	17.00	0.00	17.00	
	D	2	0.00	3.65	86.96	4.20	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	1.46	8.97	16.23	0.00	0.00	0.00	13.00	0.00	13.00	
	Dx	1	0.00	0.00	37.55	0.00	0.00	0.00	0.00	12.00	0.00	12.00	
	D-1	1	0.00	0.79	9.06	8.71	0.00	0.00	0.00	0.00	0.00	0.00	
	9	1	0.00	0.02	14.26	0.17	0.00	0.00	0.00	0.00	0.00	0.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	A	1	32.66	12.44	2.63	142.14
		2	12.86	2.09	6.15	60.73
	Ax	1	118.23	3.94	30.00	25.56
	B	1	66.71	17.29	3.86	104.79
		2	18.42	6.18	2.98	135.70
	Bx	1	138.65	4.62	30.00	28.06
	C	1	42.15	12.16	3.47	138.97
		2	25.08	3.66	6.85	69.39
	Cx	1	104.58	3.49	30.00	31.93
	D	2	139.00	5.86	23.73	75.85
		3	1.60	0.30	5.27	35.20
	Dx	1	123.29	4.11	30.00	25.91
	D-1	1	5.26	0.31	17.01	11.02
	9	1	33.63	1.15	29.35	10.06

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0.00	0.00	✓	19.68	9.27	18.11	1.00	0.00	167.24
		2	0.00	0.00	✓	3.79	0.11	3.59	1.00	0.00	25.03
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	29.76	10.29	24.15	1.00	0.00	223.95
		2	0.00	0.00	✓	9.02	3.60	8.61	1.00	0.00	82.08
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	18.63	8.22	17.06	1.00	0.00	158.65
		2	0.00	0.00	✓	6.17	0.36	5.70	1.00	0.00	42.43
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	2	0.00	0.00	✓	3.65	0.10	3.27	1.00	0.00	19.94
		3	0.00	0.00	✓	1.46	0.01	0.67	1.00	0.00	3.89
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D-1	1	0.00	0.00	✓	0.79	0.00	0.76	1.00	0.00	2.36
	9	1	0.00	0.00	✓	0.02			1.00	0.00	0.35

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	1	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	2	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	3	1	1	50	11000	60	7.15	0.93	1.41	1.41
		2	1	50	11000	60	8.16	0.51	1.61	1.61
	4	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	80.49	1.67	15.87	15.87
	5	1	4	100	11000	27	13.49	1.10	5.32	5.32
		2	4	100	11000	27	19.01	1.53	7.50	7.50

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	1	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	2	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	3	1	50	50	0		11000	5500	1		9800	1.55	60
		2	50	50	0		11000	5500	1		9800	0.00	60
	4	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	1.55	5
	5	1	100	100	0		11000	2475	4		2128	1.44	27
		2	100	100	0		11000	2475	4		2128	0.00	27

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	13.00	55.58	0.77	0.00	10.96
		2	13.00	55.58	0.77	0.00	10.96
	2	1	11.67	55.58	0.77	0.00	10.96
		2	11.67	55.58	0.77	0.00	10.96
	3	1	12.67	7.15	0.10	0.00	1.41
		2	11.67	8.16	0.11	0.00	1.61
	4	1	11.00	55.58	0.77	0.00	10.96
		2	12.00	80.49	1.12	0.00	15.87
	5	1	6.00	13.49	0.37	0.00	5.32
		2	5.00	19.01	0.53	0.00	7.50

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	1	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	2	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	3	1	0.93	10.00	9.31	0.00	0.00	0.00
		2	0.51	10.00	5.14	0.00	0.00	0.00
	4	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.67	10.00	16.67	0.00	0.00	0.00
	5	1	1.10	10.00	10.97	0.00	0.00	0.00
		2	1.53	10.00	15.28	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	1	1	0.95	0.95	1.00	68.58
		2	0.95	0.95	1.00	68.58
	2	1	0.85	0.93	0.91	67.25
		2	0.85	0.93	0.91	67.25
	3	1	0.95	0.28	3.45	19.82
		2	0.85	0.28	3.09	19.83
	4	1	0.80	0.92	0.87	66.58
		2	0.90	1.28	0.70	92.49
	5	1	0.90	0.54	1.66	19.49
		2	0.70	0.67	1.05	24.01

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	1	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	2	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	3	1	0.00	0.00	0.93	1.00	0.00	1.41
		2	0.00	0.00	0.51	1.00	0.00	1.61
	4	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.67	1.00	0.00	15.87
	5	1	0.00	0.00	1.10	1.00	0.00	5.32
		2	0.00	0.00	1.53	1.00	0.00	7.50

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
1	01/04/2022 13:58:47	01/04/2022 13:58:48	17:00	120	812.44	54.95	98.00	A/1	4	17	A/1	9/1	A/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	98	-8	4634	843	37.96	693.80	32.11	725.91

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	11	600	204	36.56	86.52	86.52

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	5234	5234	0		98	✓	-8	1047

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	20.90	37.80	29.74	25.21	780.32	48.93	1895.50	665.76	32.11

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	141.75	0.00	43.00	0.00	43.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
17:00-18:00	870.83	85.34	10.20

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	0.00	0.00	✓	1.00	0.00	0.00	812.44

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	164.9	164.5	97.4	0.0	0.0	0.0	0.0
	2	77.2	0.0	46.6	114.0	0.0	0.0	0.0	0.0
	3	174.1	86.6	0.0	170.2	0.0	0.0	0.0	0.0
	4	136.7	130.7	161.3	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	68.6	39.3	0.0
	6	0.0	0.0	0.0	0.0	68.6	0.0	0.0	67.3
	7	0.0	0.0	0.0	0.0	43.8	0.0	0.0	116.5
	8	0.0	0.0	0.0	0.0	0.0	67.3	86.1	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	25		164.88		25	164.88
2	1	3	290		164.53		290	164.53
9	3	4	125		170.19		125	170.19
10	3	1	190		174.07		190	174.07
11	4	2	422		130.70		422	130.70
13	4	1	172		136.72		172	136.72
14	7	5		50		43.83	50	43.83
15	7	8		50		116.50	50	116.50
16	2	4	278		113.97		278	113.97
17	2	3	101		46.65		101	46.65
18	8	6		50		67.25	50	67.25
19	4	3	164		161.27		164	161.27
20	3	2	124		86.64		124	86.64
23	5	6		50		68.58	50	68.58
34	6	8		50		67.25	50	67.25
35	6	5		50		68.58	50	68.58
36	8	7		50		86.07	50	86.07
37	5	7		50		39.31	50	39.31
38	1	4	190		97.45		190	97.45
39	2	1	31		77.19		31	77.19

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUES
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)
A	1	(untitled)	1	1	E	315	2030	18	0.00	98	-8	142.14	129.69	154.34	17.36
	2		1	1	D	124	2120	18	0.00	37	144	60.73	48.29	90.69	3.79
Ax	1	(untitled)				555	Unrestricted	120	0.00	0	Unrestricted	25.56	0.00	0.00	0.00
B	1	(untitled)	1	1	G	594 <	2036	35	0.00	97	-7	104.79	91.31	134.38	27.69 +
	2		1	1	F	164	2163	9	0.00	91	-1	135.70	122.23	146.62	8.50
Bx	1	(untitled)				593	Unrestricted	120	1.00	0	Unrestricted	28.06	0.00	0.00	0.00
C	1	(untitled)	1	1	I	315	2049	18	0.00	97	-7	138.97	122.91	150.17	16.77
	2		1	1	H	190	2124	18	0.00	56	59	69.39	53.55	96.32	6.17
Cx	1	(untitled)				393	Unrestricted	120	17.00	0	Unrestricted	31.93	0.00	0.00	0.00
D	2	(untitled)	1	1	B	278	2209	40	0.00	36	150	75.85	15.85	73.28	3.65
	3		1	1	A	31	2144	14	13.00	11	730	35.20	29.01	87.94	1.46
Dx	1	(untitled)				571	Unrestricted	120	12.00	0	Unrestricted	25.91	0.00	0.00	0.00
D-1	1	(untitled)	1	1	C	101	1990	73	0.00	8	1008	11.02	4.77	36.57	0.79
9	1		1			410	2059	120	0.00	20	352	10.06	0.22	0.00	0.02

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
	2	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
2	1	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
	2	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
3	1	(untitled)	1	1	L	50	11000	60	1	9800	19.82	7.15	0.93	100	0
	2	(untitled)	1	1	L	50	11000	60	1	9800	19.83	8.16	0.51	100	0
4	1	(untitled)	1	1	J	50	11000	5	11	725	66.58	55.58	1.60	100	0
	2	(untitled)	1	1	J	50	11000	5	11	725	92.49	80.49	1.67	100	0
5	1	(untitled)		1	K	100	11000	27	4	2128	19.49	13.49	1.10	100	0
	2	(untitled)		1	K	100	11000	27	4	2128	24.01	19.01	1.53	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	862.13	77.60	11.11	23.65	25.21	693.80	32.11	0.00	725.91
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	8.70	7.74	1.12	6.09	0.00	86.52	0.00	0.00	86.52
TOTAL	870.83	85.34	10.20	29.74	25.21	780.32	32.11	0.00	812.44

< = 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

A2 - 2025
D2 - 2025, PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
2	01/04/2022 13:58:48	01/04/2022 13:58:49	17:00	120	1046.02	71.03	102.67	A/1	4	17	A/1	9/1	A/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2025, PM	(untitled)			17:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
D-1	(untitled)		1
9			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	103.69	✓	Sum of lanes	2030			✓		Normal	
	2			✓	103.69	✓	Sum of lanes	2120			✓		Normal	
Ax	1	(untitled)		✓	213.03								Normal	
B	1	(untitled)		✓	112.31	✓	Sum of lanes	2036			✓		Normal	
	2			✓	112.31	✓	Sum of lanes	2163			✓		Normal	
Bx	1	(untitled)		✓	233.82								Normal	
C	1	(untitled)		✓	133.82	✓	Sum of lanes	2049			✓		Normal	
	2			✓	132.01	✓	Sum of lanes	2124			✓		Normal	
Cx	1	(untitled)		✓	266.10								Normal	
D	2	(untitled)			500.00	✓	Sum of lanes	2209			✓		Normal	
	3			✓	51.57	✓	Sum of lanes	2144	✓	1800	✓		Normal	
Dx	1	(untitled)		✓	215.92								Normal	
D-1	1	(untitled)		✓	52.09	✓	Sum of lanes	1990			✓	✓	Normal	
9	1			✓	82.02	✓	Sum of lanes	2059					Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	40	42.06	✓	2030
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	35.52		2120
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	29	39.22	✓	2036
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	70.68		2163
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	8	26.29	✓	2049
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	37.44		2124
Cx	1	1	(untitled)											
D	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00		2209
	3	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	49.21		2144
Dx	1	1	(untitled)											
D-1	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	43.60	✓	1990
9	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00	✓	2059

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
A	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Ax	1	NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Cx	1	NetworkDefault	100	100	100		0.00		
D	2	NetworkDefault	100	100	100		0.00		
	3	Flare	100	100	100		0.00		
Dx	1	NetworkDefault	100	100	100		0.00		
D-1	1	NetworkDefault	100	100	100		0.00		
9	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	330	330
	2	130	130
Ax	1	580	580
B	1	620	620
	2	172	172
Bx	1	620	620
C	1	329	329
	2	199	199
Cx	1	411	411
D	2	290	290
	3	32	32
Dx	1	596	596
D-1	1	105	105
9	1	427	427

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	E	
	2	1	D	
B	1	1	G	
	2	1	F	
C	1	1	I	
	2	1	H	
D	2	1	B	
	3	1	A	
D-1	1	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	12.44	30.00
	2	12.44	30.00
B	1	13.48	30.00
	2	13.48	30.00
C	1	16.06	30.00
	2	15.84	30.00
9	1	9.84	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	25.56	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	28.06	30.00	✓	Nearside	42.06
Cx	1	1	A/1	Cx/1	31.93	30.00	✓	Straight	Straight Movement
D	2	1	9/1	D/2	60.00	30.00	✓	Straight	Straight Movement
	3	1	9/1	D/3	6.19	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	25.91	30.00	✓	Nearside	26.29
D-1	1	1	9/1	D-1/1	6.25	30.00	✓	Straight	Straight Movement
Ax	1	2	D-1/1	Ax/1	25.56	30.00	✓	Nearside	43.60
Bx	1	2	C/2	Bx/1	28.06	30.00	✓	Offside	37.44
Cx	1	2	B/1	Cx/1	31.93	30.00	✓	Nearside	39.22
Dx	1	2	B/1	Dx/1	25.91	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	25.56	30.00	✓	Offside	70.68
Bx	1	3	D/2	Bx/1	28.06	30.00	✓	Straight	Straight Movement
Cx	1	3	D/3	Cx/1	31.93	30.00	✓	Offside	49.21
Dx	1	3	A/2	Dx/1	25.91	30.00	✓	Offside	35.52

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
D-1	1	AllTraffic		

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	18.00	12.00	5.40
2	(untitled)		1		Farside	16.00	10.67	5.40
3	(untitled)		1		Farside	16.00	10.67	5.40
4	(untitled)		1		Farside	15.00	10.00	5.40
5	(untitled)				Farside	6.00	4.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	N	
3	1	L	
4	1	J	
5	1	K	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Pedestrian Crossing Connectors

Pedestrian Crossing Connectors

Pedestrian crossing connector	Pedestrian crossing1	Pedestrian crossing2	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	5:1	3:1	3.00	2.00	5.40
2	5:1	4:2	3.00	2.00	5.40

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	26	303	199	0	0	0	0
	2	32	0	105	290	0	0	0	0
	3	199	130	0	131	0	0	0	0
	4	180	440	172	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	9/1	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	5:2E	5:2X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	26
	2		1	3	C/1, Ax/1	Normal	303
	9		3	4	A/1, Bx/1	Normal	131
	10		3	1	A/1, Cx/1	Normal	199
	11		4	2	B/1, Dx/1	Normal	440
	13		4	1	B/1, Cx/1	Normal	180
	16		2	4	9/1, D/2, Bx/1	Normal	290
	17		2	3	9/1, D-1/1, Ax/1	Normal	105
	19		4	3	B/2, Ax/1	Normal	172
	20		3	2	A/2, Dx/1	Normal	130
	38		1	4	C/2, Bx/1	Normal	199
	39		2	1	9/1, D/3, Cx/1	Normal	32

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	14		7	5	5:2E, 5:1X, 3:1E, 3:2X	Normal	50
	15		7	8	5:2E, 5:1X, 4:2E, 4:1X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	36		8	7	4:1E, 4:2X, 5:1E, 5:2X	Normal	50
	37		5	7	3:2E, 3:1X, 5:1E, 5:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	0	0	Unknown	
	B	(untitled)	5	300	0	0	Unknown	
	C	(untitled)	5	300	0	0	Unknown	
	D	(untitled)	5	300	0	0	Unknown	
	E	(untitled)	18	18	0	0	Unknown	
	F	(untitled)	5	300	0	0	Unknown	
	G	(untitled)	27	300	0	0	Unknown	
	H	(untitled)	5	300	0	0	Unknown	
	I	(untitled)	5	300	0	0	Unknown	
	J	(untitled)	5	300	0	0	Pedestrian	0
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, L	1
	2	A, B, K, L	1
	3	A, C, L, M	1
	4	A, F, K	1
	5	A, K, L, M	1
	6	B, C, G, L	1
	7	B, C, L, N	1
	8	B, G, K, L	1
	9	B, K, L, N	1
	10	C, D, E	1
	11	C, D, H	1
	12	C, D, M, N	1
	13	C, E, J	1
	14	C, H, J, L	1
	15	C, J, L, M, N	1
	16	D, E, K	1
	17	D, H, K	1
	18	D, K, M, N	1
	19	E, I, K	1
	20	E, J, K	1
	21	F, G, K	1
	22	F, J, K, N	1
	23	H, I, K	1
	24	H, J, K, L	1
	25	I, K, M	1
	26	J, K, L, M, N	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 10, 4, 6, 15, 23	18, 41, 55, 95, 105, 8
	2	(untitled)	Single	1, 10, 4, 6, 23, 15	16, 44, 68, 94, 122, 147
	3	(untitled)	Single	1, 10, 4, 6, 23, 26	16, 44, 68, 94, 122, 147
	4	(untitled)	Single	1, 10, 4, 6, 26, 23	16, 44, 68, 94, 120, 149
	5	(untitled)	Single	1, 10, 4, 6, 11, 15, 19	12, 36, 56, 78, 102, 124, 149
	6	(untitled)	Single	1, 10, 4, 6, 11, 15, 23	12, 36, 56, 78, 102, 124, 149
	7	(untitled)	Single	1, 10, 4, 6, 11, 15, 25	12, 36, 56, 78, 102, 124, 147
	8	(untitled)	Single	1, 10, 4, 6, 11, 19, 15	13, 38, 58, 80, 104, 125, 147
	9	(untitled)	Single	1, 10, 4, 6, 11, 19, 26	13, 38, 58, 80, 104, 125, 147
	10	(untitled)	Single	1, 10, 4, 6, 11, 22, 25	12, 36, 56, 78, 101, 124, 147

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5		5	5	5	5				0
	B				5	5	5		5	5	5			0	
	C						5			5		5			
	D	5	5				5	5		5	5		5		
	E	5	5				5	5	5				5	5	0
	F		5	5	5	5			5	5			0	5	
	G	5			5	5			5	5	0			5	5
	H	5	5			5	5	5						0	5
	I	5	5	5	5		5	5			5		0		5
	J	5	5		5			5		5					
	K			5											
	L				5	5	5			5					
	M		5			5	5	5	5						
	N	5				5		5	5	5					

Banned Stage transitions for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1																										
	2																										
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
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	19																										
	20																										
	21																										
	22																										
	23																										
	24																										
	25																										
	26																										

Interstage Matrix for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1	0	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	2	5	0	5	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	3	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	4	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	6	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	7	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	8	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	9	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	11	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	12	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	13	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5
	14	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5
	15	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5
	16	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5
	17	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	18	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	19	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5
	20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5
	21	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5
	22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5
	23	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5
	24	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5
	25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5
	26	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	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	A,B,C,L	13	18	5	1	5
	2	✓	10	C,D,E	23	41	18	1	18
	3	✓	4	A,F,K	46	55	9	1	5
	4	✓	6	B,C,G,L	60	95	35	1	27
	5	✓	15	C,J,L,M,N	100	105	5	1	5
	6	✓	23	H,I,K	110	8	18	1	5

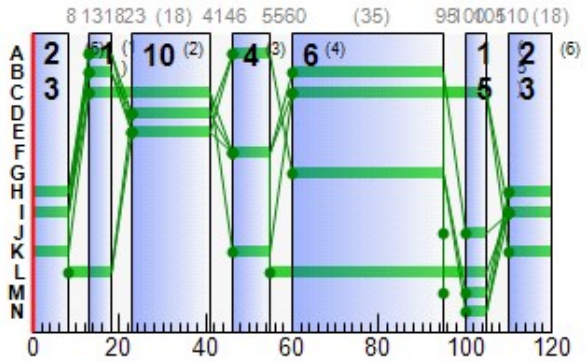
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	46	55	9
		2	✓	13	18	5
	B	1	✓	60	95	35
		2	✓	13	18	5
	C	1	✓	60	105	45
		2	✓	13	41	28
	D	1	✓	23	41	18
	E	1	✓	23	41	18
	F	1	✓	46	55	9
	G	1	✓	60	95	35
	H	1	✓	110	8	18
	I	1	✓	110	8	18
	J	1	✓	100	105	5
	K	1	✓	46	55	9
		2	✓	110	8	18
	L	1	✓	55	105	50
		2	✓	8	18	10
	M	1	✓	100	105	5
	N	1	✓	100	105	5

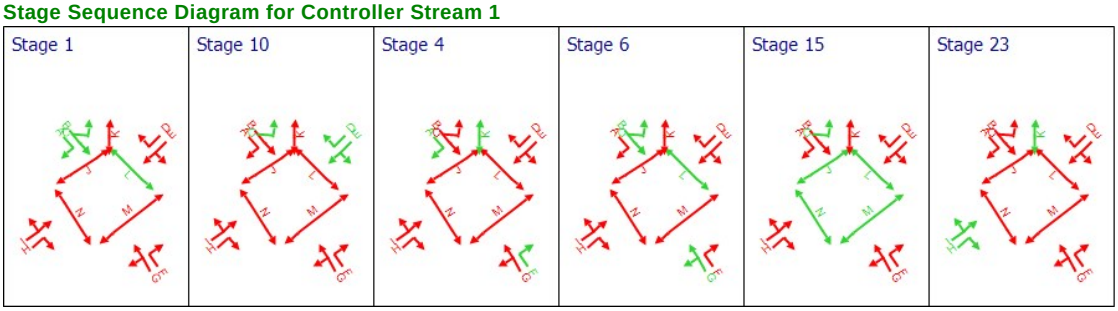
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1			Green Period 2		
					Start	End	Duration	Start	End	Duration
A	1	1	1	E	23	41	18			
A	2	1	1	D	23	41	18			
B	1	1	1	G	60	95	35			
B	2	1	1	F	46	55	9			
C	1	1	1	I	110	8	18			
C	2	1	1	H	110	8	18			
D	2	1	1	B	60	95	35	13	18	5
D	3	1	1	A	46	55	9	13	18	5
D-1	1	1	1	C	60	105	45	13	41	28

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)
17:00-18:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
17:00-18:00	A	1	(untitled)	E	330	2030	18	321	103	-12	169.18	21.62	119.91	181.63
		2		D	130	2120	18	336	39	132	48.67	3.99	22.10	61.11
	Ax	1	(untitled)		576	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.56
	B	1	(untitled)	G	620	2036	35	611	102	-11	125.44	34.67	177.49	138.91
		2		F	172	2163	9	180	95	-6	146.01	10.04	51.42	159.49
	Bx	1	(untitled)		617	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	28.06
	C	1	(untitled)	I	329	2049	18	324	101	-11	157.12	20.53	88.22	173.18
		2		H	199	2124	18	336	59	52	54.55	6.56	28.57	70.39
	Cx	1	(untitled)		403	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	31.93
	D	2	(untitled)	B	290	2209	40	773	38	140	16.03	3.90	4.48	76.03
		3		A	32	2144	14	286	11	704	29.06	1.46	16.24	35.25
	Dx	1	(untitled)		589	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.91
	D-1	1	(untitled)	C	105	1990	73	1244	8	966	4.78	0.82	9.06	11.04
	9	1			427	2059	120	2059	21	334	0.23	0.03	0.19	10.07

Data Entry - Stage Start and End

Resultant Stage

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,C,L	13	18	5	1	5
	2	✓	10	C,D,E	23	41	18	1	18
	3	✓	4	A,F,K	46	55	9	1	5
	4	✓	6	B,C,G,L	60	95	35	1	27
	5	✓	15	C,J,L,M,N	100	105	5	1	5
	6	✓	23	H,I,K	110	8	18	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	0	0	Unknown
	B	B	5	300	0	0	Unknown
	C	C	5	300	0	0	Unknown
	D	D	5	300	0	0	Unknown
	E	E	18	18	0	0	Unknown
	F	F	5	300	0	0	Unknown
	G	G	27	300	0	0	Unknown
	H	H	5	300	0	0	Unknown
	I	I	5	300	0	0	Unknown
	J	J	5	300	0	0	Pedestrian
	K	K	5	300	0	0	Pedestrian
	L	L	5	300	0	0	Pedestrian
	M	M	5	300	0	0	Pedestrian
	N	N	5	300	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2030	100	100
	2	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2120	100	100
Ax	1	✓	213.03	NetworkDefault	0.00	Normal						100	100
B	1	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2036	100	100
	2	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2163	100	100
Bx	1	✓	233.82	NetworkDefault	0.00	Normal						100	100
C	1	✓	133.82	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2049	100	100
	2	✓	132.01	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2124	100	100
Cx	1	✓	266.10	NetworkDefault	0.00	Normal						100	100
D	2		500.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2209	100	100
	3	✓	51.57	Flare	0.00	Normal	✓	✓		Sum of lanes	2144	100	100
Dx	1	✓	215.92	NetworkDefault	0.00	Normal						100	100
D-1	1	✓	52.09	NetworkDefault	0.00	Normal	✓	✓	✓	Sum of lanes	1990	100	100
9	1	✓	82.02	NetworkDefault	0.00	Normal	✓			Sum of lanes	2059	100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
17:00-18:00	1	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	2	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	3	1	50	1	60	7.15	0.93
		2	50	1	60	8.16	0.51
	4	1	50	11	5	55.58	1.60
		2	50	11	5	80.49	1.67
	5	1	100	4	27	13.49	1.10
		2	100	4	27	19.01	1.53

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	103	-12	330	2030	18	169.18	21.62	119.91	220.22	7.27	227.49
		2	39	132	130	2120	18	48.67	3.99	22.10	24.96	1.48	26.44
	Ax	1	0	Unrestricted	576	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	102	-11	620	2036	35	125.44	34.67	177.49	306.76	12.19	318.95
		2	95	-6	172	2163	9	146.01	10.04	51.42	99.06	3.48	102.54
	Bx	1	0	Unrestricted	617	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	101	-11	329	2049	18	157.12	20.53	88.22	203.90	7.01	210.91
		2	59	52	199	2124	18	54.55	6.56	28.57	42.82	2.44	45.26
	Cx	1	0	Unrestricted	403	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	38	140	290	2209	40	16.03	3.90	4.48	18.34	2.69	21.03
		3	11	704	32	2144	14	29.06	1.46	16.24	3.67	0.35	4.02
	Dx	1	0	Unrestricted	589	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	8	966	105	1990	73	4.78	0.82	9.06	1.98	0.48	2.46
	9	1	21	334	427	2059	120	0.23	0.03	0.19	0.39	0.00	0.39

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	330	321	0		2030	321	103	✓	-12	0.00	18
		2	130	130	0		2120	336	39		132	0.00	18
	Ax	1	576	576	4	✓	Unrestricted	Unrestricted	0		Unrestricted	0.77	120
	B	1	620	611	0		2036	611	102	✓	-11	0.00	35
		2	172	172	0		2163	180	95	✓	-6	0.00	9
	Bx	1	617	617	3	✓	Unrestricted	Unrestricted	0		Unrestricted	0.49	120
	C	1	329	324	0		2049	324	101	✓	-11	0.00	18
		2	199	199	0		2124	336	59		52	0.00	18
	Cx	1	403	403	8	✓	Unrestricted	Unrestricted	0		Unrestricted	0.58	120
	D	2	290	290	0		2209	773	38		140	0.00	40
		3	32	32	0		2144	286	11		704	0.00	14
	Dx												
	D-1	1	105	105	0		1990	1244	8		966	0.00	73
	9	1	427	427	0		2059	2059	21		334	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	12.44	169.18	4.51	11.00	220.22	180.43	320.25	259.68	7.27
		2	12.44	48.67	1.64	0.12	24.96	90.97	114.64	3.63	1.48
	Ax	1	25.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	13.48	125.44	7.13	14.48	306.76	159.16	605.74	366.40	12.19
		2	13.48	146.01	2.62	4.36	99.06	161.39	168.81	108.78	3.48
	Bx	1	28.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16.06	157.12	4.55	9.81	203.90	172.37	321.96	237.25	7.01
		2	15.84	54.55	2.59	0.42	42.82	97.70	181.94	12.48	2.44
	Cx	1	31.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	60.00	16.03	1.18	0.11	18.34	74.06	208.07	6.70	2.69
		3	6.19	29.06	0.25	0.01	3.67	87.98	27.73	0.42	0.35
	Dx	1	25.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	6.25	4.78	0.14	0.00	1.98	36.61	38.20	0.23	0.48
	9	1	9.84	0.23	0.00	0.03	0.39	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	21.62	18.03	119.91	0.62	0.00	0.00	0.00	0.00	0.00	
		2	0.00	3.99	18.03	22.10	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	37.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	B	1	0.00	34.67	19.53	177.49	5.69	0.00	0.00	0.00	0.00	0.00	
		2	0.00	10.04	19.53	51.42	0.00	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	40.66	0.00	0.00	0.00	0.00	1.00	0.00	1.00	
	C	1	0.00	20.53	23.27	88.22	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	6.56	22.96	28.57	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	46.28	0.00	0.00	0.00	0.00	16.00	0.00	16.00	
	D	2	0.00	3.90	86.96	4.48	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	1.46	8.97	16.24	0.00	0.00	0.00	13.00	0.00	13.00	
	Dx	1	0.00	0.00	37.55	0.00	0.00	0.00	0.00	12.00	0.00	12.00	
	D-1	1	0.00	0.82	9.06	9.06	0.00	0.00	0.00	0.00	0.00	0.00	
	9	1	0.00	0.03	14.26	0.19	0.00	0.00	0.00	0.00	0.00	0.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	A	1	34.22	16.65	2.06	181.63
		2	13.48	2.21	6.11	61.11
	Ax	1	122.66	4.09	30.00	25.56
	B	1	69.63	23.92	2.91	138.91
		2	19.32	7.62	2.54	159.49
	Bx	1	144.17	4.81	30.00	28.06
	C	1	44.03	15.83	2.78	173.18
		2	26.27	3.89	6.75	70.39
	Cx	1	107.28	3.58	30.00	31.93
	D	2	145.00	6.13	23.67	76.03
		3	1.65	0.31	5.27	35.25
	Dx	1	127.20	4.24	30.00	25.91
	D-1	1	5.47	0.32	16.99	11.04
	9	1	35.02	1.19	29.32	10.07

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0.00	0.00	✓	27.97	17.35	26.37	1.00	0.00	227.49
		2	0.00	0.00	✓	3.99	0.12	3.77	1.00	0.00	26.44
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	42.50	22.31	36.56	1.00	0.00	318.95
		2	0.00	0.00	✓	11.25	5.56	10.82	1.00	0.00	102.54
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	25.56	14.83	23.93	1.00	0.00	210.91
		2	0.00	0.00	✓	6.56	0.43	6.01	1.00	0.00	45.26
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	2	0.00	0.00	✓	3.90	0.11	3.42	1.00	0.00	21.03
		3	0.00	0.00	✓	1.46	0.01	0.69	1.00	0.00	4.02
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D-1	1	0.00	0.00	✓	0.82	0.00	0.79	1.00	0.00	2.46
	9	1	0.00	0.00	✓	0.03			1.00	0.00	0.39

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	1	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	2	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	3	1	1	50	11000	60	7.15	0.93	1.41	1.41
		2	1	50	11000	60	8.16	0.51	1.61	1.61
	4	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	80.49	1.67	15.87	15.87
	5	1	4	100	11000	27	13.49	1.10	5.32	5.32
		2	4	100	11000	27	19.01	1.53	7.50	7.50

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	1	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	2	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	3	1	50	50	0		11000	5500	1		9800	1.55	60
		2	50	50	0		11000	5500	1		9800	0.00	60
	4	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	1.55	5
	5	1	100	100	0		11000	2475	4		2128	1.44	27
		2	100	100	0		11000	2475	4		2128	0.00	27

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	13.00	55.58	0.77	0.00	10.96
		2	13.00	55.58	0.77	0.00	10.96
	2	1	11.67	55.58	0.77	0.00	10.96
		2	11.67	55.58	0.77	0.00	10.96
	3	1	12.67	7.15	0.10	0.00	1.41
		2	11.67	8.16	0.11	0.00	1.61
	4	1	11.00	55.58	0.77	0.00	10.96
		2	12.00	80.49	1.12	0.00	15.87
	5	1	6.00	13.49	0.37	0.00	5.32
		2	5.00	19.01	0.53	0.00	7.50

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	1	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	2	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	3	1	0.93	10.00	9.31	0.00	0.00	0.00
		2	0.51	10.00	5.14	0.00	0.00	0.00
	4	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.67	10.00	16.67	0.00	0.00	0.00
	5	1	1.10	10.00	10.97	0.00	0.00	0.00
		2	1.53	10.00	15.28	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	1	1	0.95	0.95	1.00	68.58
		2	0.95	0.95	1.00	68.58
	2	1	0.85	0.93	0.91	67.25
		2	0.85	0.93	0.91	67.25
	3	1	0.95	0.28	3.45	19.82
		2	0.85	0.28	3.09	19.83
	4	1	0.80	0.92	0.87	66.58
		2	0.90	1.28	0.70	92.49
	5	1	0.90	0.54	1.66	19.49
		2	0.70	0.67	1.05	24.01

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	1	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	2	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	3	1	0.00	0.00	0.93	1.00	0.00	1.41
		2	0.00	0.00	0.51	1.00	0.00	1.61
	4	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.67	1.00	0.00	15.87
	5	1	0.00	0.00	1.10	1.00	0.00	5.32
		2	0.00	0.00	1.53	1.00	0.00	7.50

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
2	01/04/2022 13:58:48	01/04/2022 13:58:49	17:00	120	1046.02	71.03	102.67	A/1	4	17	A/1	9/1	A/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	103	-12	4819	843	48.51	922.09	37.40	959.49

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	11	600	204	36.56	86.52	86.52

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	5419	5396	22	✓	103	✓	-12	1047

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	20.92	47.19	30.69	40.34	1008.61	55.75	1987.34	995.58	37.40

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	177.49	0.00	42.00	0.00	42.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
17:00-18:00	904.10	102.52	8.82

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	0.00	0.00	✓	1.00	0.00	0.00	1046.02

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	199.1	198.7	98.5	0.0	0.0	0.0	0.0
	2	77.3	0.0	46.7	114.2	0.0	0.0	0.0	0.0
	3	213.6	87.0	0.0	209.7	0.0	0.0	0.0	0.0
	4	170.8	164.8	185.1	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	68.6	39.3	0.0
	6	0.0	0.0	0.0	0.0	68.6	0.0	0.0	67.3
	7	0.0	0.0	0.0	0.0	43.8	0.0	0.0	116.5
	8	0.0	0.0	0.0	0.0	0.0	67.3	86.1	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	26		199.09		26	199.09
2	1	3	303		198.74		303	198.74
9	3	4	131		209.68		131	209.68
10	3	1	199		213.56		199	213.56
11	4	2	440		164.82		440	164.82
13	4	1	180		170.84		180	170.84
14	7	5		50		43.83	50	43.83
15	7	8		50		116.50	50	116.50
16	2	4	290		114.16		290	114.16
17	2	3	105		46.67		105	46.67
18	8	6		50		67.25	50	67.25
19	4	3	172		185.05		172	185.05
20	3	2	130		87.02		130	87.02
23	5	6		50		68.58	50	68.58
34	6	8		50		67.25	50	67.25
35	6	5		50		68.58	50	68.58
36	8	7		50		86.07	50	86.07
37	5	7		50		39.31	50	39.31
38	1	4	199		98.45		199	98.45
39	2	1	32		77.25		32	77.25

Final Prediction Table

Traffic Stream Results

			SIGNALS			FLOWS		PERFORMANCE				PER PCU			QUEUES
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)
A	1	(untitled)	1	1	E	330 <	2030	18	0.00	103	-12	181.63	169.18	180.43	21.62 +
	2		1	1	D	130	2120	18	0.00	39	132	61.11	48.67	90.97	3.99
Ax	1	(untitled)				576	Unrestricted	120	0.00	0	Unrestricted	25.56	0.00	0.00	0.00
B	1	(untitled)	1	1	G	620 <	2036	35	0.00	102	-11	138.91	125.44	159.16	34.67 +
	2		1	1	F	172	2163	9	0.00	95	-6	159.49	146.01	161.39	10.04
Bx	1	(untitled)				617	Unrestricted	120	1.00	0	Unrestricted	28.06	0.00	0.00	0.00
C	1	(untitled)	1	1	I	329	2049	18	0.00	101	-11	173.18	157.12	172.37	20.53
	2		1	1	H	199	2124	18	0.00	59	52	70.39	54.55	97.70	6.56
Cx	1	(untitled)				403	Unrestricted	120	16.00	0	Unrestricted	31.93	0.00	0.00	0.00
D	2	(untitled)	1	1	B	290	2209	40	0.00	38	140	76.03	16.03	74.06	3.90
	3		1	1	A	32	2144	14	13.00	11	704	35.25	29.06	87.98	1.46
Dx	1	(untitled)				589	Unrestricted	120	12.00	0	Unrestricted	25.91	0.00	0.00	0.00
D-1	1	(untitled)	1	1	C	105	1990	73	0.00	8	966	11.04	4.78	36.61	0.82
9	1		1			427	2059	120	0.00	21	334	10.07	0.23	0.00	0.03

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
	2	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
2	1	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
	2	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
3	1	(untitled)	1	1	L	50	11000	60	1	9800	19.82	7.15	0.93	100	0
	2	(untitled)	1	1	L	50	11000	60	1	9800	19.83	8.16	0.51	100	0
4	1	(untitled)	1	1	J	50	11000	5	11	725	66.58	55.58	1.60	100	0
	2	(untitled)	1	1	J	50	11000	5	11	725	92.49	80.49	1.67	100	0
5	1	(untitled)		1	K	100	11000	27	4	2128	19.49	13.49	1.10	100	0
	2	(untitled)		1	K	100	11000	27	4	2128	24.01	19.01	1.53	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	895.40	94.78	9.45	24.60	40.34	922.09	37.40	0.00	959.49
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	8.70	7.74	1.12	6.09	0.00	86.52	0.00	0.00	86.52
TOTAL	904.10	102.52	8.82	30.69	40.34	1008.61	37.40	0.00	1046.02

< = 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

A3 - 2025 + LAP Developments
D3 - 2025 + LAP Developments, PM*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:58:50	01/04/2022 13:58:51	17:00	120	3066.86	211.66	131.07	B/2	4	17	B/2	9/1	B/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025 + LAP Developments		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2025 + LAP Developments, PM	(untitled)			17:00	

Network Options

Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
D-1	(untitled)		1
9			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)		✓	103.69	✓	Sum of lanes	2031			✓		Normal	
	2			✓	103.69	✓	Sum of lanes	2120			✓		Normal	
Ax	1	(untitled)		✓	213.03								Normal	
B	1	(untitled)		✓	112.31	✓	Sum of lanes	2041			✓		Normal	
	2			✓	112.31	✓	Sum of lanes	2163			✓		Normal	
Bx	1	(untitled)		✓	233.82								Normal	
C	1	(untitled)		✓	133.82	✓	Sum of lanes	2038			✓		Normal	
	2			✓	132.01	✓	Sum of lanes	2124			✓		Normal	
Cx	1	(untitled)		✓	266.10								Normal	
D	2	(untitled)			500.00	✓	Sum of lanes	2209			✓		Normal	
	3			✓	51.57	✓	Sum of lanes	2144	✓	1800	✓		Normal	
Dx	1	(untitled)		✓	215.92								Normal	
D-1	1	(untitled)		✓	52.09	✓	Sum of lanes	1990			✓	✓	Normal	
9	1			✓	82.02	✓	Sum of lanes	2059					Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
A	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	39	42.06	✓	2031
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	35.52		2120
Ax	1	1	(untitled)											
B	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	22	39.22	✓	2041
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	70.68		2163
Bx	1	1	(untitled)											
C	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	18	26.29	✓	2038
	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	37.44		2124
Cx	1	1	(untitled)											
D	2	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00		2209
	3	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	49.21		2144
Dx	1	1	(untitled)											
D-1	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	100	43.60	✓	1990
9	1	1	(untitled)		✓	N/A	Clearly Good	0	3.00	✓	0	99999.00	✓	2059

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
A	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Ax	1	NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Bx	1	NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		0.00		
	2	NetworkDefault	100	100	100		0.00		
Cx	1	NetworkDefault	100	100	100		0.00		
D	2	NetworkDefault	100	100	100		0.00		
	3	Flare	100	100	100		0.00		
Dx	1	NetworkDefault	100	100	100		0.00		
D-1	1	NetworkDefault	100	100	100		0.00		
9	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	362	362
	2	142	142
Ax	1	639	639
B	1	815	815
	2	189	189
Bx	1	750	750
C	1	410	410
	2	199	199
Cx	1	443	443
D	2	410	410
	3	42	42
Dx	1	849	849
D-1	1	112	112
9	1	564	564

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	E	
	2	1	D	
B	1	1	G	
	2	1	F	
C	1	1	I	
	2	1	H	
D	2	1	B	
	3	1	A	
D-1	1	1	C	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	12.44	30.00
	2	12.44	30.00
B	1	13.48	30.00
	2	13.48	30.00
C	1	16.06	30.00
	2	15.84	30.00
9	1	9.84	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	25.56	30.00	✓	Straight	Straight Movement
Bx	1	1	A/1	Bx/1	28.06	30.00	✓	Nearside	42.06
Cx	1	1	A/1	Cx/1	31.93	30.00	✓	Straight	Straight Movement
D	2	1	9/1	D/2	60.00	30.00	✓	Straight	Straight Movement
	3	1	9/1	D/3	6.19	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	25.91	30.00	✓	Nearside	26.29
D-1	1	1	9/1	D-1/1	6.25	30.00	✓	Straight	Straight Movement
Ax	1	2	D-1/1	Ax/1	25.56	30.00	✓	Nearside	43.60
Bx	1	2	C/2	Bx/1	28.06	30.00	✓	Offside	37.44
Cx	1	2	B/1	Cx/1	31.93	30.00	✓	Nearside	39.22
Dx	1	2	B/1	Dx/1	25.91	30.00	✓	Straight	Straight Movement
Ax	1	3	B/2	Ax/1	25.56	30.00	✓	Offside	70.68
Bx	1	3	D/2	Bx/1	28.06	30.00	✓	Straight	Straight Movement
Cx	1	3	D/3	Cx/1	31.93	30.00	✓	Offside	49.21
Dx	1	3	A/2	Dx/1	25.91	30.00	✓	Offside	35.52

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
D-1	1	AllTraffic		

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	18.00	12.00	5.40
2	(untitled)		1		Farside	16.00	10.67	5.40
3	(untitled)		1		Farside	16.00	10.67	5.40
4	(untitled)		1		Farside	15.00	10.00	5.40
5	(untitled)				Farside	6.00	4.00	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	N	
3	1	L	
4	1	J	
5	1	K	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Pedestrian Crossing Connectors

Pedestrian Crossing Connectors

Pedestrian crossing connector	Pedestrian crossing1	Pedestrian crossing2	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	5:1	3:1	3.00	2.00	5.40
2	5:1	4:2	3.00	2.00	5.40

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
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25		

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	72	338	199	0	0	0	0
	2	42	0	112	410	0	0	0	0
	3	221	142	0	141	0	0	0	0
	4	180	635	189	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1, C/2	Cx/1	#0000FF
	2	(untitled)	9/1	Dx/1	#FF0000
	3	(untitled)	A/1, A/2	Ax/1	#00FF00
	4	(untitled)	B/1, B/2	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	5:2E	5:2X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	72
	2		1	3	C/1, Ax/1	Normal	338
	9		3	4	A/1, Bx/1	Normal	141
	10		3	1	A/1, Cx/1	Normal	221
	11		4	2	B/1, Dx/1	Normal	635
	13		4	1	B/1, Cx/1	Normal	180
	16		2	4	9/1, D/2, Bx/1	Normal	410
	17		2	3	9/1, D-1/1, Ax/1	Normal	112
	19		4	3	B/2, Ax/1	Normal	189
	20		3	2	A/2, Dx/1	Normal	142
	38		1	4	C/2, Bx/1	Normal	199
	39		2	1	9/1, D/3, Cx/1	Normal	42

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	14		7	5	5:2E, 5:1X, 3:1E, 3:2X	Normal	50
	15		7	8	5:2E, 5:1X, 4:2E, 4:1X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	36		8	7	4:1E, 4:2X, 5:1E, 5:2X	Normal	50
	37		5	7	3:2E, 3:1X, 5:1E, 5:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

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	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	5	300	0	0	Unknown	
	B	(untitled)	5	300	0	0	Unknown	
	C	(untitled)	5	300	0	0	Unknown	
	D	(untitled)	5	300	0	0	Unknown	
	E	(untitled)	18	18	0	0	Unknown	
	F	(untitled)	5	300	0	0	Unknown	
	G	(untitled)	27	300	0	0	Unknown	
	H	(untitled)	5	300	0	0	Unknown	
	I	(untitled)	5	300	0	0	Unknown	
	J	(untitled)	5	300	0	0	Pedestrian	0
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, B, C, L	1
	2	A, B, K, L	1
	3	A, C, L, M	1
	4	A, F, K	1
	5	A, K, L, M	1
	6	B, C, G, L	1
	7	B, C, L, N	1
	8	B, G, K, L	1
	9	B, K, L, N	1
	10	C, D, E	1
	11	C, D, H	1
	12	C, D, M, N	1
	13	C, E, J	1
	14	C, H, J, L	1
	15	C, J, L, M, N	1
	16	D, E, K	1
	17	D, H, K	1
	18	D, K, M, N	1
	19	E, I, K	1
	20	E, J, K	1
	21	F, G, K	1
	22	F, J, K, N	1
	23	H, I, K	1
	24	H, J, K, L	1
	25	I, K, M	1
	26	J, K, L, M, N	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 10, 4, 6, 15, 23	18, 41, 53, 95, 105, 8
	2	(untitled)	Single	1, 10, 4, 6, 23, 15	16, 44, 68, 94, 122, 147
	3	(untitled)	Single	1, 10, 4, 6, 23, 26	16, 44, 68, 94, 122, 147
	4	(untitled)	Single	1, 10, 4, 6, 26, 23	16, 44, 68, 94, 120, 149
	5	(untitled)	Single	1, 10, 4, 6, 11, 15, 19	12, 36, 56, 78, 102, 124, 149
	6	(untitled)	Single	1, 10, 4, 6, 11, 15, 23	12, 36, 56, 78, 102, 124, 149
	7	(untitled)	Single	1, 10, 4, 6, 11, 15, 25	12, 36, 56, 78, 102, 124, 147
	8	(untitled)	Single	1, 10, 4, 6, 11, 19, 15	13, 38, 58, 80, 104, 125, 147
	9	(untitled)	Single	1, 10, 4, 6, 11, 19, 26	13, 38, 58, 80, 104, 125, 147
	10	(untitled)	Single	1, 10, 4, 6, 11, 22, 25	12, 36, 56, 78, 101, 124, 147

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5		5	5	5	5				0
	B				5	5	5		5	5	5			0	
	C						5			5		5			
	D	5	5				5	5		5	5		5		
	E	5	5				5	5	5				5	5	0
	F		5	5	5	5			5	5			0	5	
	G	5			5	5			5	5	0			5	5
	H	5	5			5	5	5						0	5
	I	5	5	5	5		5	5			5		0		5
	J	5	5		5			5		5					
	K			5											
	L				5	5	5			5					
	M		5			5	5	5	5						
	N	5				5		5	5	5					

Banned Stage transitions for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1																										
	2																										
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
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	20																										
	21																										
	22																										
	23																										
	24																										
	25																										
	26																										

Interstage Matrix for Controller Stream 1

		To																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
From	1	0	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	2	5	0	5	5	0	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	3	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	4	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	6	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	7	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	8	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	9	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	11	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	12	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	13	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5
	14	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5
	15	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5
	16	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5
	17	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	18	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	19	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5
	20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5	5
	21	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5	5
	22	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5	5	5
	23	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5
	24	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	5
	25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5
	26	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	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	A,B,C,L	13	18	5	1	5
	2	✓	10	C,D,E	23	41	18	1	18
	3	✓	4	A,F,K	46	53	7	1	5
	4	✓	6	B,C,G,L	58	95	37	1	27
	5	✓	15	C,J,L,M,N	100	105	5	1	5
	6	✓	23	H,I,K	110	8	18	1	5

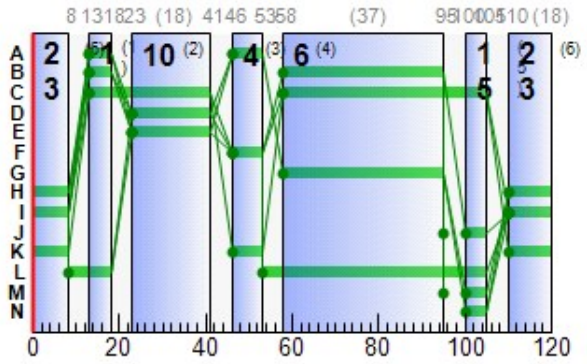
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	46	53	7
		2	✓	13	18	5
	B	1	✓	58	95	37
		2	✓	13	18	5
	C	1	✓	58	105	47
		2	✓	13	41	28
	D	1	✓	23	41	18
	E	1	✓	23	41	18
	F	1	✓	46	53	7
	G	1	✓	58	95	37
	H	1	✓	110	8	18
	I	1	✓	110	8	18
	J	1	✓	100	105	5
	K	1	✓	46	53	7
		2	✓	110	8	18
	L	1	✓	53	105	52
		2	✓	8	18	10
	M	1	✓	100	105	5
	N	1	✓	100	105	5

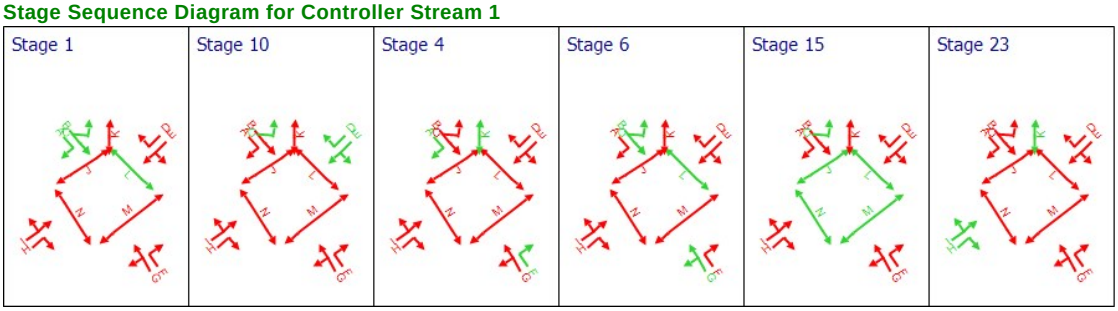
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1			Green Period 2		
					Start	End	Duration	Start	End	Duration
A	1	1	1	E	23	41	18			
A	2	1	1	D	23	41	18			
B	1	1	1	G	58	95	37			
B	2	1	1	F	46	53	7			
C	1	1	1	I	110	8	18			
C	2	1	1	H	110	8	18			
D	2	1	1	B	58	95	37	13	18	5
D	3	1	1	A	46	53	7	13	18	5
D-1	1	1	1	C	58	105	47	13	41	28

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)
17:00-18:00	1	0.00	0.00	0.00	0.00

Results - Link

Results - Traffic Stream

Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
17:00-18:00	A	1	(untitled)	E	362	2031	18	322	113	-20	278.52	34.13	189.23	290.96
		2		D	142	2120	18	336	42	113	49.48	4.41	24.48	61.92
	Ax	1	(untitled)		522	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.56
	B	1	(untitled)	G	815	2041	37	646	126	-29	413.25	107.56	550.67	426.73
		2		F	189	2163	7	144	131	-31	497.03	28.62	146.51	510.51
	Bx	1	(untitled)		734	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	28.06
	C	1	(untitled)	I	410	2038	18	323	127	-29	438.36	56.06	240.89	454.41
		2		H	199	2124	18	336	59	52	54.55	6.56	28.57	70.39
	Cx	1	(untitled)		381	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	31.93
	D	2	(untitled)	B	410	2209	42	810	51	78	21.32	7.17	8.24	81.32
		3		A	42	2144	12	250	17	436	31.17	1.47	16.35	37.36
	Dx	1	(untitled)		702	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	25.91
	D-1	1	(untitled)	C	112	1990	75	1277	9	926	4.50	0.88	9.66	10.76
	9	1			564	2059	120	2059	27	229	0.33	0.05	0.36	10.17

Data Entry - Stage Start and End

Resultant Stage

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,C,L	13	18	5	1	5
	2	✓	10	C,D,E	23	41	18	1	18
	3	✓	4	A,F,K	46	53	7	1	5
	4	✓	6	B,C,G,L	58	95	37	1	27
	5	✓	15	C,J,L,M,N	100	105	5	1	5
	6	✓	23	H,I,K	110	8	18	1	5

Data Entry - Phase

Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	300	0	0	Unknown
	B	B	5	300	0	0	Unknown
	C	C	5	300	0	0	Unknown
	D	D	5	300	0	0	Unknown
	E	E	18	18	0	0	Unknown
	F	F	5	300	0	0	Unknown
	G	G	27	300	0	0	Unknown
	H	H	5	300	0	0	Unknown
	I	I	5	300	0	0	Unknown
	J	J	5	300	0	0	Pedestrian
	K	K	5	300	0	0	Pedestrian
	L	L	5	300	0	0	Pedestrian
	M	M	5	300	0	0	Pedestrian
	N	N	5	300	0	0	Pedestrian

Data Entry - Traffic Stream

Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2031	100	100
	2	✓	103.69	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2120	100	100
Ax	1	✓	213.03	NetworkDefault	0.00	Normal						100	100
B	1	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2041	100	100
	2	✓	112.31	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2163	100	100
Bx	1	✓	233.82	NetworkDefault	0.00	Normal						100	100
C	1	✓	133.82	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2038	100	100
	2	✓	132.01	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2124	100	100
Cx	1	✓	266.10	NetworkDefault	0.00	Normal						100	100
D	2		500.00	NetworkDefault	0.00	Normal	✓	✓		Sum of lanes	2209	100	100
	3	✓	51.57	Flare	0.00	Normal	✓	✓		Sum of lanes	2144	100	100
Dx	1	✓	215.92	NetworkDefault	0.00	Normal						100	100
D-1	1	✓	52.09	NetworkDefault	0.00	Normal	✓	✓	✓	Sum of lanes	1990	100	100
9	1	✓	82.02	NetworkDefault	0.00	Normal	✓			Sum of lanes	2059	100	100

Data entry - Link

Results - Pedestrian

Pedestrian Crossings: Pedestrian summary

Time Segment	Pedestrian crossing	Side	Calculated Flow Entering (Ped/hr)	Degree of saturation (%)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)
17:00-18:00	1	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	2	1	50	11	5	55.58	1.60
		2	50	11	5	55.58	1.60
	3	1	50	1	62	6.68	0.96
		2	50	1	62	7.55	0.49
	4	1	50	11	5	55.58	1.60
		2	50	11	5	81.55	1.67
	5	1	100	4	25	13.79	1.10
		2	100	4	25	19.95	1.58

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	113	-20	362	2031	18	278.52	34.13	189.23	397.70	9.68	407.38
		2	42	113	142	2120	18	49.48	4.41	24.48	27.71	1.64	29.35
	Ax	1	0	Unrestricted	522	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	126	-29	815	2041	37	413.25	107.56	550.67	1328.49	24.36	1352.85
		2	131	-31	189	2163	7	497.03	28.62	146.51	370.54	5.83	376.37
	Bx	1	0	Unrestricted	734	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	127	-29	410	2038	18	438.36	56.06	240.89	708.92	12.37	721.29
		2	59	52	199	2124	18	54.55	6.56	28.57	42.82	2.44	45.26
	Cx	1	0	Unrestricted	381	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	51	78	410	2209	42	21.32	7.17	8.24	34.48	4.01	38.49
		3	17	436	42	2144	12	31.17	1.47	16.35	5.16	0.48	5.64
	Dx	1	0	Unrestricted	702	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	9	926	112	1990	75	4.50	0.88	9.66	1.99	0.49	2.48
	9	1	27	229	564	2059	120	0.33	0.05	0.36	0.73	0.00	0.73

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	362	322	0		2031	322	113	✓	-20	0.00	18
		2	142	142	0		2120	336	42		113	0.00	18
	Ax	1	522	522	117	✓	Unrestricted	Unrestricted	0		Unrestricted	0.75	120
	B	1	815	646	0		2041	646	126	✓	-29	0.00	37
		2	189	144	0		2163	144	131	✓	-31	0.00	7
	Bx	1	734	734	16	✓	Unrestricted	Unrestricted	0		Unrestricted	0.43	120
	C	1	410	323	0		2038	323	127	✓	-29	0.00	18
		2	199	199	0		2124	336	59		52	0.00	18
	Cx	1	381	381	62	✓	Unrestricted	Unrestricted	0		Unrestricted	0.55	120
	D	2	410	410	0		2209	810	51		78	0.00	42
		3	42	42	0		2144	250	17		436	0.00	12
	Dx	1	702	702	147	✓	Unrestricted	Unrestricted	0		Unrestricted	0.68	120
	D-1	1	112	112	0		1990	1277	9		926	0.00	75
	9	1	564	564	0		2059	2059	27		229	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	12.44	278.52	4.51	23.50	397.70	240.10	321.58	450.53	9.68
		2	12.44	49.48	1.80	0.15	27.71	92.12	126.22	4.59	1.64
	Ax	1	25.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	13.48	413.25	7.36	86.19	1328.49	300.58	646.32	1296.40	24.36
		2	13.48	497.03	2.24	23.85	370.54	322.65	144.20	321.06	5.83
	Bx	1	28.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	16.06	438.36	4.53	45.40	708.92	305.84	322.68	664.22	12.37
		2	15.84	54.55	2.59	0.42	42.82	97.70	181.94	12.48	2.44
	Cx	1	31.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	2	60.00	21.32	2.17	0.26	34.48	78.04	312.23	7.72	4.01
		3	6.19	31.17	0.35	0.02	5.16	90.73	37.10	1.01	0.48
	Dx	1	25.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D-1	1	6.25	4.50	0.14	0.00	1.99	34.92	38.86	0.25	0.49
	9	1	9.84	0.33	0.00	0.05	0.73	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	34.13	18.03	189.23	10.78	0.00	0.00	0.00	0.00	0.00	
		2	0.00	4.41	18.03	24.48	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	37.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	B	1	0.00	107.56	19.53	550.67	77.34	0.00	0.00	0.00	0.00	0.00	
		2	0.00	28.62	19.53	146.51	6.70	0.00	0.00	0.00	0.00	0.00	
	Bx	1	0.00	0.00	40.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	C	1	0.00	56.06	23.27	240.89	27.46	0.00	0.00	0.00	0.00	0.00	
		2	0.00	6.56	22.96	28.57	0.00	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	46.28	0.00	0.00	0.00	0.00	19.00	0.00	19.00	
	D	2	0.00	7.17	86.96	8.24	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	1.47	8.97	16.35	0.00	0.00	0.00	11.00	0.00	11.00	
	Dx	1	0.00	0.00	37.55	0.00	0.00	0.00	0.00	3.00	0.00	3.00	
	D-1	1	0.00	0.88	9.06	9.66	0.00	0.00	0.00	0.00	0.00	0.00	
	9	1	0.00	0.05	14.26	0.36	0.00	0.00	0.00	0.00	0.00	0.00	

Traffic Stream Results: Journey times

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	A	1	37.54	29.26	1.28	290.96
		2	14.72	2.44	6.03	61.92
	Ax	1	111.25	3.71	30.00	25.56
	B	1	91.53	96.61	0.95	426.73
		2	21.23	26.80	0.79	510.51
	Bx	1	171.68	5.72	30.00	28.06
	C	1	54.87	51.75	1.06	454.41
		2	26.27	3.89	6.75	70.39
	Cx	1	101.40	3.38	30.00	31.93
	D	2	205.00	9.26	22.14	81.32
		3	2.17	0.44	4.97	37.36
	Dx	1	151.62	5.05	30.00	25.91
	D-1	1	5.83	0.33	17.44	10.76
	9	1	46.26	1.59	29.03	10.17

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0.00	0.00	✓	54.63	44.00	53.02	1.00	0.00	407.38
		2	0.00	0.00	✓	4.41	0.15	4.14	1.00	0.00	29.35
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	B	1	0.00	0.00	✓	191.93	170.57	185.29	1.00	0.00	1352.85
		2	0.00	0.00	✓	51.09	46.32	50.81	1.00	0.00	376.37
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	C	1	0.00	0.00	✓	99.77	89.11	98.16	1.00	0.00	721.29
		2	0.00	0.00	✓	6.56	0.43	6.01	1.00	0.00	45.26
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D	2	0.00	0.00	✓	7.17	1.47	5.92	1.00	0.00	38.49
		3	0.00	0.00	✓	1.47	0.02	0.94	1.00	0.00	5.64
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00
	D-1	1	0.00	0.00	✓	0.88	0.00	0.84	1.00	0.00	2.48
	9	1	0.00	0.00	✓	0.05			1.00	0.00	0.73

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	1	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	2	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	55.58	1.60	10.96	10.96
	3	1	1	50	11000	62	6.68	0.96	1.32	1.32
		2	1	50	11000	62	7.55	0.49	1.49	1.49
	4	1	11	50	11000	5	55.58	1.60	10.96	10.96
		2	11	50	11000	5	81.55	1.67	16.08	16.08
	5	1	4	100	11000	25	13.79	1.10	5.44	5.44
		2	4	100	11000	25	19.95	1.58	7.87	7.87

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	1	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	2	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	0.00	5
	3	1	50	50	0		11000	5683	1		10130	1.58	62
		2	50	50	0		11000	5683	1		10130	0.00	62
	4	1	50	50	0		11000	458	11		725	0.00	5
		2	50	50	0		11000	458	11		725	1.58	5
	5	1	100	100	0		11000	2292	4		1963	1.43	25
		2	100	100	0		11000	2292	4		1963	0.00	25

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	13.00	55.58	0.77	0.00	10.96
		2	13.00	55.58	0.77	0.00	10.96
	2	1	11.67	55.58	0.77	0.00	10.96
		2	11.67	55.58	0.77	0.00	10.96
	3	1	12.67	6.68	0.09	0.00	1.32
		2	11.67	7.55	0.10	0.00	1.49
	4	1	11.00	55.58	0.77	0.00	10.96
		2	12.00	81.55	1.13	0.00	16.08
	5	1	6.00	13.79	0.38	0.00	5.44
		2	5.00	19.95	0.55	0.00	7.87

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	1	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	2	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.60	10.00	15.97	0.00	0.00	0.00
	3	1	0.96	10.00	9.58	0.00	0.00	0.00
		2	0.49	10.00	4.86	0.00	0.00	0.00
	4	1	1.60	10.00	15.97	0.00	0.00	0.00
		2	1.67	10.00	16.67	0.00	0.00	0.00
	5	1	1.10	10.00	10.97	0.00	0.00	0.00
		2	1.58	10.00	15.83	0.00	0.00	0.00

Pedestrian Crossings: Journey times

Time Segment	Crossing	Side	Distance travelled (Ped-km/hr)	Time spent (Ped-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
17:00-18:00	1	1	0.95	0.95	1.00	68.58
		2	0.95	0.95	1.00	68.58
	2	1	0.85	0.93	0.91	67.25
		2	0.85	0.93	0.91	67.25
	3	1	0.95	0.27	3.54	19.34
		2	0.85	0.27	3.18	19.22
	4	1	0.80	0.92	0.87	66.58
		2	0.90	1.30	0.69	93.55
	5	1	0.90	0.55	1.64	19.79
		2	0.70	0.69	1.01	24.95

Pedestrian Crossings: Advanced

Time Segment	Crossing	Side	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Mean Max Queue EoTS (Ped)	Ped Factor	Cost of traffic penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	1	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	2	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.60	1.00	0.00	10.96
	3	1	0.00	0.00	0.96	1.00	0.00	1.32
		2	0.00	0.00	0.49	1.00	0.00	1.49
	4	1	0.00	0.00	1.60	1.00	0.00	10.96
		2	0.00	0.00	1.67	1.00	0.00	16.08
	5	1	0.00	0.00	1.10	1.00	0.00	5.44
		2	0.00	0.00	1.58	1.00	0.00	7.87

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
3	01/04/2022 13:58:50	01/04/2022 13:58:51	17:00	120	3066.86	211.66	131.07	B/2	4	17	B/2	9/1	B/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	131	-31	5585	845	132.49	2918.54	61.31	2979.85

Network Results: Pedestrian summary

Time Segment	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	11	600	204	36.76	87.01	87.01

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	6185	5844	341	✓	131	✓	-31	1049

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	21.16	123.20	31.81	179.85	3005.55	95.48	2131.12	2758.26	61.31

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	550.67	0.00	33.00	0.00	33.00

Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
17:00-18:00	1050.08	248.02	4.23

Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Performance Index (£ per hr)
17:00-18:00	0.00	0.00	✓	1.00	0.00	0.00	3066.86

Point to Point Journey Time

Average Journey Time (s) for Local Matrix: 1

		To							
		1	2	3	4	5	6	7	8
From	1	0.0	480.3	480.0	98.5	0.0	0.0	0.0	0.0
	2	79.5	0.0	46.5	119.5	0.0	0.0	0.0	0.0
	3	322.9	87.8	0.0	319.0	0.0	0.0	0.0	0.0
	4	458.7	452.6	536.1	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	68.6	39.0	0.0
	6	0.0	0.0	0.0	0.0	68.6	0.0	0.0	67.3
	7	0.0	0.0	0.0	0.0	44.3	0.0	0.0	118.5
	8	0.0	0.0	0.0	0.0	0.0	67.3	86.4	0.0

Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Pedestrian calculated flow (Ped/hr)	Normal journey time (s)	Pedestrian journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	72		480.32		72	480.32
2	1	3	338		479.98		338	479.98
9	3	4	141		319.02		141	319.02
10	3	1	221		322.90		221	322.90
11	4	2	635		452.64		635	452.64
13	4	1	180		458.66		180	458.66
14	7	5		50		44.29	50	44.29
15	7	8		50		118.50	50	118.50
16	2	4	410		119.55		410	119.55
17	2	3	112		46.49		112	46.49
18	8	6		50		67.25	50	67.25
19	4	3	189		536.08		189	536.08
20	3	2	142		87.83		142	87.83
23	5	6		50		68.58	50	68.58
34	6	8		50		67.25	50	67.25
35	6	5		50		68.58	50	68.58
36	8	7		50		86.38	50	86.38
37	5	7		50		39.01	50	39.01
38	1	4	199		98.45		199	98.45
39	2	1	42		79.47		42	79.47

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)
A	1	(untitled)	1	1	E	362 <	2031	18	0.00	113	-20	290.96	278.52	240.10	34.13 +
	2		1	1	D	142	2120	18	0.00	42	113	61.92	49.48	92.12	4.41
Ax	1	(untitled)				522	Unrestricted	120	0.00	0	Unrestricted	25.56	0.00	0.00	0.00
B	1	(untitled)	1	1	G	815 <	2041	37	0.00	126	-29	426.73	413.25	300.58	107.56 +
	2		1	1	F	189 <	2163	7	0.00	131	-31	510.51	497.03	322.65	28.62 +
Bx	1	(untitled)				734	Unrestricted	120	0.00	0	Unrestricted	28.06	0.00	0.00	0.00
C	1	(untitled)	1	1	I	410 <	2038	18	0.00	127	-29	454.41	438.36	305.84	56.06 +
	2		1	1	H	199	2124	18	0.00	59	52	70.39	54.55	97.70	6.56
Cx	1	(untitled)				381	Unrestricted	120	19.00	0	Unrestricted	31.93	0.00	0.00	0.00
D	2	(untitled)	1	1	B	410	2209	42	0.00	51	78	81.32	21.32	78.04	7.17
	3		1	1	A	42	2144	12	11.00	17	436	37.36	31.17	90.73	1.47
Dx	1	(untitled)				702	Unrestricted	120	3.00	0	Unrestricted	25.91	0.00	0.00	0.00
D-1	1	(untitled)	1	1	C	112	1990	75	0.00	9	926	10.76	4.50	34.92	0.88
9	1		1			564	2059	120	0.00	27	229	10.17	0.33	0.00	0.05

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
	2	(untitled)	1	1	M	50	11000	5	11	725	68.58	55.58	1.60	100	0
2	1	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
	2	(untitled)	1	1	N	50	11000	5	11	725	67.25	55.58	1.60	100	0
3	1	(untitled)	1	1	L	50	11000	62	1	10130	19.34	6.68	0.96	100	0
	2	(untitled)	1	1	L	50	11000	62	1	10130	19.22	7.55	0.49	100	0
4	1	(untitled)	1	1	J	50	11000	5	11	725	66.58	55.58	1.60	100	0
	2	(untitled)	1	1	J	50	11000	5	11	725	93.55	81.55	1.67	100	0
5	1	(untitled)		1	K	100	11000	25	4	1963	19.79	13.79	1.10	100	0
	2	(untitled)		1	K	100	11000	25	4	1963	24.95	19.95	1.58	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	1041.38	240.24	4.33	25.68	179.85	2918.54	61.31	0.00	2979.85
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	8.70	7.78	1.12	6.13	0.00	87.01	0.00	0.00	87.01
TOTAL	1050.08	248.02	4.23	31.81	179.85	3005.55	61.31	0.00	3066.86

< = 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

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Junction 4 - AM-PM.j9
Path: M:\Projects\17\17-144\Design\Traffic\Junction Modelling\MODELLING MAY 2021\Junction 4
Report generation date: 01/04/2022 14:12:45

Summary of junction performance

	AM		PM	
	Queue (Veh)	RFC	Queue (Veh)	RFC
	Junction 4 - 2022			
1 - Glen Ellan Road (E)	0.6	0.36	0.8	0.44
2 - Glen Ellan Road (S)	0.7	0.43	0.8	0.44
3 - Glen Ellan Road (W)	1.4	0.58	0.4	0.26
4 - Northern Arm	0.6	0.39	0.3	0.20
	Junction 4 - 2025			
1 - Glen Ellan Road (E)	0.6	0.39	0.9	0.46
2 - Glen Ellan Road (S)	0.8	0.45	0.9	0.47
3 - Glen Ellan Road (W)	1.6	0.61	0.4	0.28
4 - Northern Arm	0.7	0.42	0.3	0.21
	Junction 4 - 2025 + LAP Developments			
1 - Glen Ellan Road (E)	1.0	0.51	1.3	0.56
2 - Glen Ellan Road (S)	1.1	0.53	1.2	0.54
3 - Glen Ellan Road (W)	3.7	0.79	0.6	0.36
4 - Northern Arm	1.2	0.55	0.3	0.23
	Junction 4 - 2030			
1 - Glen Ellan Road (E)	0.8	0.45	1.0	0.50
2 - Glen Ellan Road (S)	1.0	0.49	1.0	0.51
3 - Glen Ellan Road (W)	2.9	0.75	0.4	0.30
4 - Northern Arm	1.2	0.55	0.3	0.24
	Junction 4 - 2030 + Overall LAP			
1 - Glen Ellan Road (E)	1.2	0.55	2.1	0.68
2 - Glen Ellan Road (S)	1.3	0.58	1.8	0.64
3 - Glen Ellan Road (W)	5.8	0.86	0.7	0.42
4 - Northern Arm	2.0	0.67	0.4	0.27
	Junction 4 - 2040			
1 - Glen Ellan Road (E)	0.8	0.44	1.1	0.52
2 - Glen Ellan Road (S)	1.0	0.51	1.1	0.53
3 - Glen Ellan Road (W)	2.3	0.70	0.5	0.32
4 - Northern Arm	1.1	0.53	0.3	0.25
	Junction 4 - 2040 + Overall LAP			
1 - Glen Ellan Road (E)	1.3	0.57	2.3	0.70
2 - Glen Ellan Road (S)	1.5	0.60	2.0	0.67
3 - Glen Ellan Road (W)	7.4	0.89	0.8	0.44
4 - Northern Arm	2.5	0.72	0.4	0.28

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

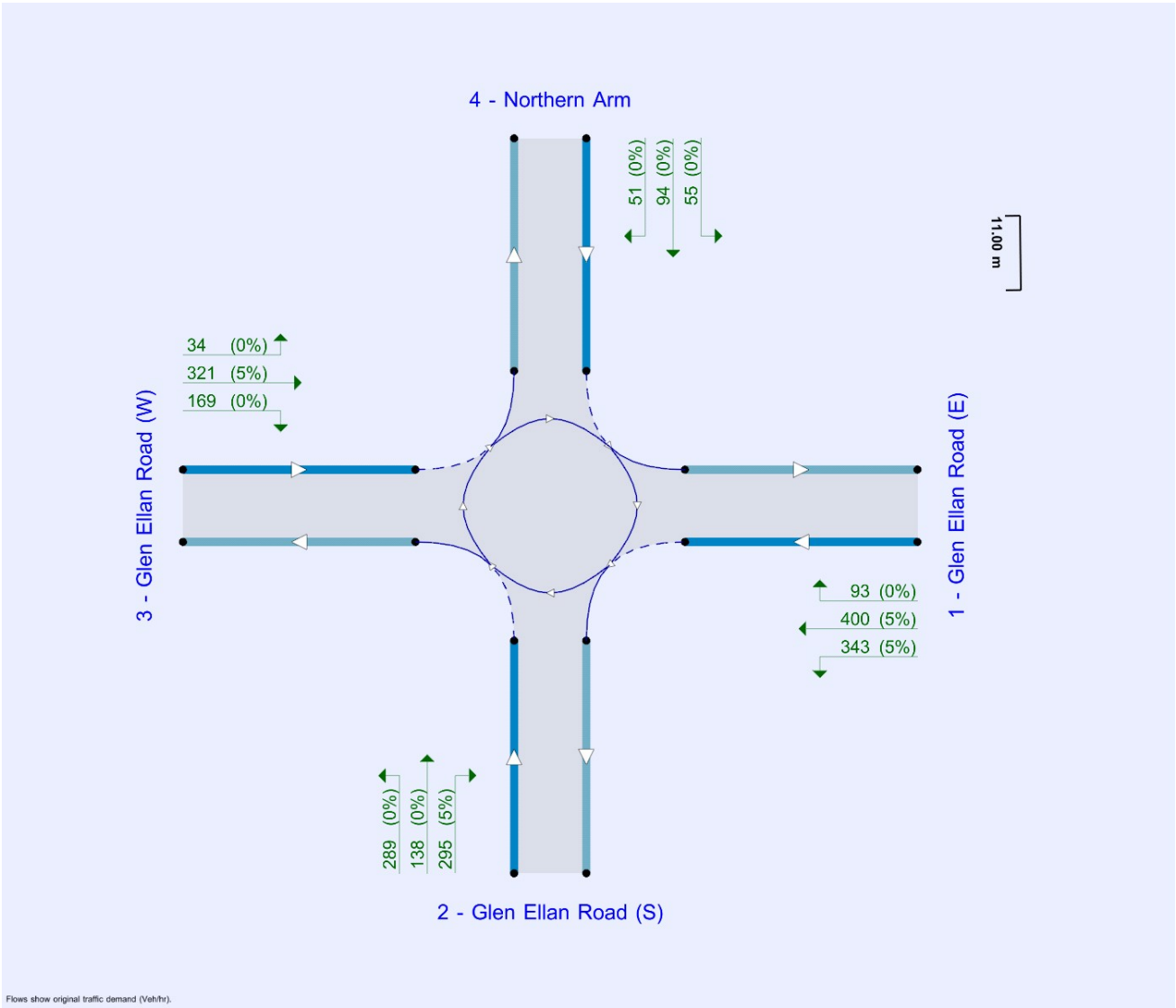
File summary

File Description

Title	
Location	
Site number	
Date	27/03/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2022	AM	FLAT	08:00	09:00	60	✓
D2	2022	PM	FLAT	17:00	18:00	60	✓
D3	2025	AM	FLAT	08:00	09:00	60	✓
D4	2025	PM	FLAT	17:00	18:00	60	✓
D5	2025 + LAP Developments	AM	FLAT	08:00	09:00	60	✓
D6	2025 + LAP Developments	PM	FLAT	17:00	18:00	60	✓
D7	2030	AM	FLAT	08:00	09:00	60	✓
D8	2030	PM	FLAT	17:00	18:00	60	✓
D9	2030 + Overall LAP	AM	FLAT	08:00	09:00	60	✓
D10	2030 + Overall LAP	PM	FLAT	17:00	18:00	60	✓
D11	2040	AM	FLAT	08:00	09:00	60	✓
D12	2040	PM	FLAT	17:00	18:00	60	✓
D13	2040 + Overall LAP	AM	FLAT	08:00	09:00	60	✓
D14	2040 + Overall LAP	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Junction 4	100.000

Junction 4 - 2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Glen Ellan Road (E)	
2	Glen Ellan Road (S)	
3	Glen Ellan Road (W)	
4	Northern Arm	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Glen Ellan Road (E)	3.80	5.01	7.9	32.8	33.0	26.1	
2 - Glen Ellan Road (S)	3.50	5.42	8.7	33.0	33.0	24.3	
3 - Glen Ellan Road (W)	4.00	7.00	5.0	27.7	33.0	23.1	
4 - Northern Arm	3.50	3.95	2.4	16.0	33.0	25.4	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Glen Ellan Road (E)	0.612	1443
2 - Glen Ellan Road (S)	0.616	1455
3 - Glen Ellan Road (W)	0.642	1580
4 - Northern Arm	0.543	1150

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2022	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	401	100.000
2 - Glen Ellan Road (S)		✓	530	100.000
3 - Glen Ellan Road (W)		✓	766	100.000
4 - Northern Arm		✓	243	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	137	205	59
	2 - Glen Ellan Road (S)	221	0	231	78
	3 - Glen Ellan Road (W)	396	331	0	39
	4 - Northern Arm	89	121	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.36	5.14	0.6	A
2 - Glen Ellan Road (S)	0.43	5.06	0.7	A
3 - Glen Ellan Road (W)	0.58	6.58	1.4	A
4 - Northern Arm	0.39	9.55	0.6	A

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	401	484	1100	0.365	400	0.6	5.144	A
2 - Glen Ellan Road (S)	530	297	1240	0.428	529	0.7	5.062	A
3 - Glen Ellan Road (W)	766	357	1310	0.585	765	1.4	6.581	A
4 - Northern Arm	243	946	619	0.393	242	0.6	9.553	A

Junction 4 - 2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.95	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D2	2022	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	546	100.000
2 - Glen Ellan Road (S)		✓	538	100.000
3 - Glen Ellan Road (W)		✓	335	100.000
4 - Northern Arm		✓	172	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	247	219	80
	2 - Glen Ellan Road (S)	216	0	203	119
	3 - Glen Ellan Road (W)	190	116	0	29
	4 - Northern Arm	47	81	44	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.44	5.16	0.8	A
2 - Glen Ellan Road (S)	0.44	5.32	0.8	A
3 - Glen Ellan Road (W)	0.26	3.84	0.4	A
4 - Northern Arm	0.20	5.27	0.3	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	546	241	1242	0.439	545	0.8	5.158	A
2 - Glen Ellan Road (S)	538	343	1212	0.444	537	0.8	5.325	A
3 - Glen Ellan Road (W)	335	414	1272	0.263	335	0.4	3.841	A
4 - Northern Arm	172	521	855	0.201	172	0.3	5.266	A

Junction 4 - 2025, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D3	2025	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	419	100.000
2 - Glen Ellan Road (S)		✓	553	100.000
3 - Glen Ellan Road (W)		✓	799	100.000
4 - Northern Arm		✓	253	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	144	214	61
	2 - Glen Ellan Road (S)	231	0	241	81
	3 - Glen Ellan Road (W)	413	345	0	41
	4 - Northern Arm	93	126	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.39	5.37	0.6	A
2 - Glen Ellan Road (S)	0.45	5.29	0.8	A
3 - Glen Ellan Road (W)	0.61	7.11	1.6	A
4 - Northern Arm	0.42	10.46	0.7	B

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	419	504	1088	0.385	418	0.6	5.373	A
2 - Glen Ellan Road (S)	553	308	1232	0.449	552	0.8	5.288	A
3 - Glen Ellan Road (W)	799	372	1300	0.614	797	1.6	7.112	A
4 - Northern Arm	253	987	596	0.425	252	0.7	10.462	B

Junction 4 - 2025, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D4	2025	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	570	100.000
2 - Glen Ellan Road (S)		✓	562	100.000
3 - Glen Ellan Road (W)		✓	351	100.000
4 - Northern Arm		✓	179	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	258	229	83
	2 - Glen Ellan Road (S)	226	0	212	124
	3 - Glen Ellan Road (W)	198	122	0	31
	4 - Northern Arm	49	84	46	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.46	5.39	0.9	A
2 - Glen Ellan Road (S)	0.47	5.60	0.9	A
3 - Glen Ellan Road (W)	0.28	3.96	0.4	A
4 - Northern Arm	0.21	5.43	0.3	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	570	252	1236	0.461	569	0.9	5.392	A
2 - Glen Ellan Road (S)	562	357	1203	0.467	561	0.9	5.602	A
3 - Glen Ellan Road (W)	351	432	1260	0.279	351	0.4	3.955	A
4 - Northern Arm	179	545	842	0.213	179	0.3	5.427	A

Junction 4 - 2025 + LAP Developments, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.44	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2025 + LAP Developments	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	532	100.000
2 - Glen Ellan Road (S)		✓	623	100.000
3 - Glen Ellan Road (W)		✓	1003	100.000
4 - Northern Arm		✓	253	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	178	293	61
	2 - Glen Ellan Road (S)	274	0	268	81
	3 - Glen Ellan Road (W)	557	405	0	41
	4 - Northern Arm	93	126	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.51	6.90	1.0	A
2 - Glen Ellan Road (S)	0.53	6.43	1.1	A
3 - Glen Ellan Road (W)	0.79	13.13	3.7	B
4 - Northern Arm	0.55	17.39	1.2	C

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	532	563	1052	0.506	531	1.0	6.901	A
2 - Glen Ellan Road (S)	623	387	1181	0.528	622	1.1	6.426	A
3 - Glen Ellan Road (W)	1003	415	1270	0.790	999	3.7	13.127	B
4 - Northern Arm	253	1232	458	0.553	252	1.2	17.394	C

Junction 4 - 2025 + LAP Developments, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D6	2025 + LAP Developments	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	681	100.000
2 - Glen Ellan Road (S)		✓	621	100.000
3 - Glen Ellan Road (W)		✓	447	100.000
4 - Northern Arm		✓	179	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	269	329	83
	2 - Glen Ellan Road (S)	232	0	265	124
	3 - Glen Ellan Road (W)	261	155	0	31
	4 - Northern Arm	49	84	46	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.56	6.71	1.3	A
2 - Glen Ellan Road (S)	0.54	6.89	1.2	A
3 - Glen Ellan Road (W)	0.36	4.45	0.6	A
4 - Northern Arm	0.23	5.94	0.3	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	681	285	1215	0.560	680	1.3	6.706	A
2 - Glen Ellan Road (S)	621	457	1141	0.544	620	1.2	6.888	A
3 - Glen Ellan Road (W)	447	438	1255	0.356	446	0.6	4.448	A
4 - Northern Arm	179	647	785	0.228	179	0.3	5.939	A

Junction 4 - 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	9.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2030	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	450	100.000
2 - Glen Ellan Road (S)		✓	595	100.000
3 - Glen Ellan Road (W)		✓	959	100.000
4 - Northern Arm		✓	273	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	154	230	66
	2 - Glen Ellan Road (S)	249	0	259	87
	3 - Glen Ellan Road (W)	444	471	0	44
	4 - Northern Arm	100	136	37	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.45	6.45	0.8	A
2 - Glen Ellan Road (S)	0.49	5.77	1.0	A
3 - Glen Ellan Road (W)	0.75	10.84	2.9	B
4 - Northern Arm	0.55	15.70	1.2	C

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	450	642	1007	0.447	449	0.8	6.445	A
2 - Glen Ellan Road (S)	595	332	1217	0.489	594	1.0	5.769	A
3 - Glen Ellan Road (W)	959	401	1285	0.746	956	2.9	10.845	B
4 - Northern Arm	273	1161	500	0.546	272	1.2	15.700	C

Junction 4 - 2030, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D8	2030	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	613	100.000
2 - Glen Ellan Road (S)		✓	603	100.000
3 - Glen Ellan Road (W)		✓	377	100.000
4 - Northern Arm		✓	193	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	277	246	90
	2 - Glen Ellan Road (S)	243	0	227	133
	3 - Glen Ellan Road (W)	213	131	0	33
	4 - Northern Arm	53	91	49	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.50	5.86	1.0	A
2 - Glen Ellan Road (S)	0.51	6.15	1.0	A
3 - Glen Ellan Road (W)	0.30	4.17	0.4	A
4 - Northern Arm	0.24	5.75	0.3	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	613	271	1225	0.500	612	1.0	5.864	A
2 - Glen Ellan Road (S)	603	384	1186	0.508	602	1.0	6.153	A
3 - Glen Ellan Road (W)	377	465	1239	0.304	377	0.4	4.171	A
4 - Northern Arm	193	586	819	0.236	193	0.3	5.748	A

Junction 4 - 2030 + Overall LAP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	14.10	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D9	2030 + Overall LAP	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	562	100.000
2 - Glen Ellan Road (S)		✓	671	100.000
3 - Glen Ellan Road (W)		✓	1069	100.000
4 - Northern Arm		✓	273	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	188	308	66
	2 - Glen Ellan Road (S)	298	0	286	87
	3 - Glen Ellan Road (W)	594	431	0	44
	4 - Northern Arm	100	136	37	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.55	7.66	1.2	A
2 - Glen Ellan Road (S)	0.58	7.23	1.3	A
3 - Glen Ellan Road (W)	0.86	18.98	5.8	C
4 - Northern Arm	0.67	25.60	2.0	D

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	562	600	1030	0.546	561	1.2	7.658	A
2 - Glen Ellan Road (S)	671	410	1166	0.575	670	1.3	7.227	A
3 - Glen Ellan Road (W)	1069	450	1247	0.857	1063	5.8	18.985	C
4 - Northern Arm	273	1317	410	0.666	271	2.0	25.602	D

Junction 4 - 2030 + Overall LAP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	8.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D10	2030 + Overall LAP	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	815	100.000
2 - Glen Ellan Road (S)		✓	701	100.000
3 - Glen Ellan Road (W)		✓	512	100.000
4 - Northern Arm		✓	193	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	333	392	90
	2 - Glen Ellan Road (S)	287	0	281	133
	3 - Glen Ellan Road (W)	314	165	0	33
	4 - Northern Arm	53	91	49	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.68	9.18	2.1	A
2 - Glen Ellan Road (S)	0.64	9.09	1.8	A
3 - Glen Ellan Road (W)	0.42	5.16	0.7	A
4 - Northern Arm	0.27	6.85	0.4	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	815	304	1203	0.678	813	2.1	9.183	A
2 - Glen Ellan Road (S)	701	530	1094	0.641	699	1.8	9.088	A
3 - Glen Ellan Road (W)	512	509	1208	0.424	511	0.7	5.163	A
4 - Northern Arm	193	765	718	0.269	193	0.4	6.851	A

Junction 4 - 2040, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	8.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D11	2040	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	466	100.000
2 - Glen Ellan Road (S)		✓	615	100.000
3 - Glen Ellan Road (W)		✓	889	100.000
4 - Northern Arm		✓	282	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	160	238	68
	2 - Glen Ellan Road (S)	257	0	268	90
	3 - Glen Ellan Road (W)	460	384	0	45
	4 - Northern Arm	104	140	38	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.44	6.10	0.8	A
2 - Glen Ellan Road (S)	0.51	6.03	1.0	A
3 - Glen Ellan Road (W)	0.70	9.26	2.3	A
4 - Northern Arm	0.53	14.21	1.1	B

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	466	560	1055	0.442	465	0.8	6.099	A
2 - Glen Ellan Road (S)	615	343	1210	0.508	614	1.0	6.027	A
3 - Glen Ellan Road (W)	889	414	1273	0.698	887	2.3	9.255	A
4 - Northern Arm	282	1098	533	0.529	281	1.1	14.206	B

Junction 4 - 2040, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D12	2040	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	634	100.000
2 - Glen Ellan Road (S)		✓	624	100.000
3 - Glen Ellan Road (W)		✓	390	100.000
4 - Northern Arm		✓	200	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	286	255	93
	2 - Glen Ellan Road (S)	251	0	235	138
	3 - Glen Ellan Road (W)	221	135	0	34
	4 - Northern Arm	55	94	51	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.52	6.13	1.1	A
2 - Glen Ellan Road (S)	0.53	6.48	1.1	A
3 - Glen Ellan Road (W)	0.32	4.29	0.5	A
4 - Northern Arm	0.25	5.92	0.3	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	634	280	1220	0.520	633	1.1	6.125	A
2 - Glen Ellan Road (S)	624	398	1177	0.530	623	1.1	6.478	A
3 - Glen Ellan Road (W)	390	481	1229	0.317	390	0.5	4.287	A
4 - Northern Arm	200	606	807	0.248	200	0.3	5.921	A

Junction 4 - 2040 + Overall LAP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	16.82	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D13	2040 + Overall LAP	AM	FLAT	08:00	09:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	577	100.000
2 - Glen Ellan Road (S)		✓	692	100.000
3 - Glen Ellan Road (W)		✓	1099	100.000
4 - Northern Arm		✓	282	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	193	316	68
	2 - Glen Ellan Road (S)	307	0	295	90
	3 - Glen Ellan Road (W)	610	444	0	45
	4 - Northern Arm	104	140	38	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.57	8.08	1.3	A
2 - Glen Ellan Road (S)	0.60	7.65	1.5	A
3 - Glen Ellan Road (W)	0.89	23.43	7.4	C
4 - Northern Arm	0.72	32.05	2.5	D

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	577	617	1020	0.566	576	1.3	8.083	A
2 - Glen Ellan Road (S)	692	421	1160	0.597	691	1.5	7.650	A
3 - Glen Ellan Road (W)	1099	464	1239	0.887	1092	7.4	23.428	C
4 - Northern Arm	282	1353	389	0.724	279	2.5	32.055	D

Junction 4 - 2040 + Overall LAP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	8.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D14	2040 + Overall LAP	PM	FLAT	17:00	18:00	60	✓

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Glen Ellan Road (E)		✓	836	100.000
2 - Glen Ellan Road (S)		✓	722	100.000
3 - Glen Ellan Road (W)		✓	524	100.000
4 - Northern Arm		✓	200	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	343	400	93
	2 - Glen Ellan Road (S)	295	0	289	138
	3 - Glen Ellan Road (W)	321	169	0	34
	4 - Northern Arm	55	94	51	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Glen Ellan Road (E)	2 - Glen Ellan Road (S)	3 - Glen Ellan Road (W)	4 - Northern Arm
From	1 - Glen Ellan Road (E)	0	5	5	0
	2 - Glen Ellan Road (S)	5	0	0	0
	3 - Glen Ellan Road (W)	5	0	0	0
	4 - Northern Arm	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Glen Ellan Road (E)	0.70	9.83	2.3	A
2 - Glen Ellan Road (S)	0.67	9.79	2.0	A
3 - Glen Ellan Road (W)	0.44	5.33	0.8	A
4 - Northern Arm	0.28	7.09	0.4	A

Main Results for each time segment

17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Glen Ellan Road (E)	836	313	1198	0.698	834	2.3	9.831	A
2 - Glen Ellan Road (S)	722	543	1086	0.665	720	2.0	9.795	A
3 - Glen Ellan Road (W)	524	525	1198	0.437	523	0.8	5.332	A
4 - Northern Arm	200	783	707	0.283	200	0.4	7.089	A

UK and Ireland Office Locations