# TRAFFIC AND TRANSPORTATION 13

## CONTENTS


INTRODUCTION ..... 1
- Background ..... 1
- Existing Development ..... 1
- Proposed Development ..... 2
- Existing Site Access ..... 2
- Proposed Site Access ..... 3
- Information Reviewed ..... 3
- Existing Road Network ..... 3
- Methodology ..... 4

THE EXISTING ENVIRONMENT ..... 4
- Existing Traffic Flows ..... 4
- Non-Car Access / Transport ..... 10
- Site Access Sightlines ..... 11
- Accident History ..... 11
- Proposed Road Network Improvements ..... 13

IMPACT OF THE PROPOSED DEVELOPMENT ..... 13
- Future Trip Generation ..... 13
- Distribution and Assignment ..... 13
- Other Planned Developments ..... 14
- Traffic Increase ..... 14
- Junction Capacity Assessment ..... 15
- Road Capacity Assessment ..... 23

PROPOSED MITIGATION MEASURES ..... 25

CONCLUSIONS ..... 26


## TABLES


Table 13-1 2016 AM Peak Existing (07:30 – 08:30) ..... 5
Table 13-2 2016 PM Peak Existing (16:45 – 17:45) – ..... 5
Table 13-3 2016 AM Peak Existing (07:30 – 08:30) ..... 7
Table 13-4 2016 PM Peak Existing (16:45 – 17:45) ..... 7
Table 13-5 2016 AM Peak Existing (07:30 – 08:30) ..... 8
Table 13-6 2016 PM Peak Existing (16:45 – 17:45) ..... 8
Table 13-7 2016 AM Peak Existing (07:30 – 08:30) ..... 9
Table 13-8 2016 PM Peak Existing (16:45 – 17:45) ..... 10
Table 13-9 Road Collision History ..... 12
Table 13-10 Future Trip Generation ..... 13
Table 13-11 Peak hour Flows ..... 14
Table 13-12 Future Year Traffic Growth ..... 15
Table 13-13 R135 / N2 Slip Road Priority Junction : AM Peak ..... 16
Table 13-14 R135 / N2 Slip Road Priority Junction : PM Peak ..... 16
Table 13-15 R135 / N2 Link Road Roundabout Junction : AM Peak ..... 17
Table 13-16 R135 / N2 Link Road Roundabout Junction : PM Peak ..... 18
Table 13-17 R135 / Elm Road Signalised Junction : AM Peak ..... 19
Table 13-18 R135 / Elm Road Signalised Junction : PM Peak ..... 20
Table 13-19 R135 / L3125 Signalised Junction : AM Peak ..... 21
Table 13-20 R135 / L3125 Signalised Junction : PM Peak ..... 22
Table 13-21 2016 Existing Annual Average Daily Traffic ..... 23
Table 13-22 2017 Proposed Annual Average Daily Traffic with Development Flows 24



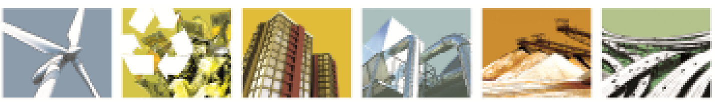



Table 13-23 2022 Proposed Annual Average Daily Traffic with Development Flows 24
Table 13-24 2032 Proposed Annual Average Daily Traffic with Development Flows 25

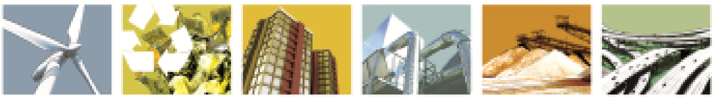
## FIGURES

Figure 13-1 Site Location Map ........ 2
Figure 13-2 R135 / N2 Slip Road Priority Junction Traffic Profile........ 5
Figure 13-3 R135 / N2 Slip Road Priority Junction Vehicle Percentages........ 5
Figure 13-4 R135 / Elm Road Signalised Junction ........ 6
Figure 13-5 R135 / Elm Road Signalised Junction Vehicle Percentages........ 6
Figure 13-6 R135 / L3125 Signalised Junction Traffic Profile ........ 7
Figure 13-7 R135 / L3125 Signalised Junction Vehicle Percentages........ 8
Figure 13-8 R135 / N2 Roundabout Junction Traffic Profile........ 9
Figure 13-9 R135 / L3125 Signalised Junction Vehicle Percentages........ 9
Figure 13-10 Road Collisions ........ 12

## APPENDICES

Appendix 13-A – Traffic Count Data
Appendix 13-B – Traffic Flow Sheets
Appendix 13-C – PICADY Results
Appendix 13-D – ARCADY Results
Appendix 13-E – OSCADY PRO Results





# INTRODUCTION

## Background

13.1 Roadplan Consulting was appointed by SLR Consulting Ireland to identify and assess the traffic and transportation impacts of a planning application to increase the permitted intake rate of construction and demolition (C&D) waste to its C&D waste recovery facility at the Huntstown Quarry Complex at North Road, Finglas, Dublin 11, from a maximum of 24,950 tonnes per annum at the present time to 95,000 tonnes per annum in future years.

13.2 No further C&D waste will be imported to the existing waste recovery facility, located on a 1.9 hectare site in the Central Quarry. The planning application provides for processing and off-site dispatch of C&D waste stockpiled at the existing facility in the near-term (2-3 years), following publication of End of Waste criteria for recycled aggregate. It also provides for

(i) relocation of C&D waste recovery activities to a dedicated new long-term recovery facility on a 5.2 hectare site in the north-eastern corner of the Huntstown Quarry Complex and

(ii) construction of a hardstanding area, waste processing shed, surface water management infrastructure and upgraded internal access road at the new waste recovery facility.

13.3 This chapter predicts the trips expected to be generated by the proposed development, and the impacts of those trips on the operational performance of the local road network and junctions, in particular the following:

- R135 / N2 Slip Road - Priority Junction
- R135 / Elm Road - Signalised Junction
- R135 / L3125 - Signalised Junction
- R135 / N2 - Roundabout Junction



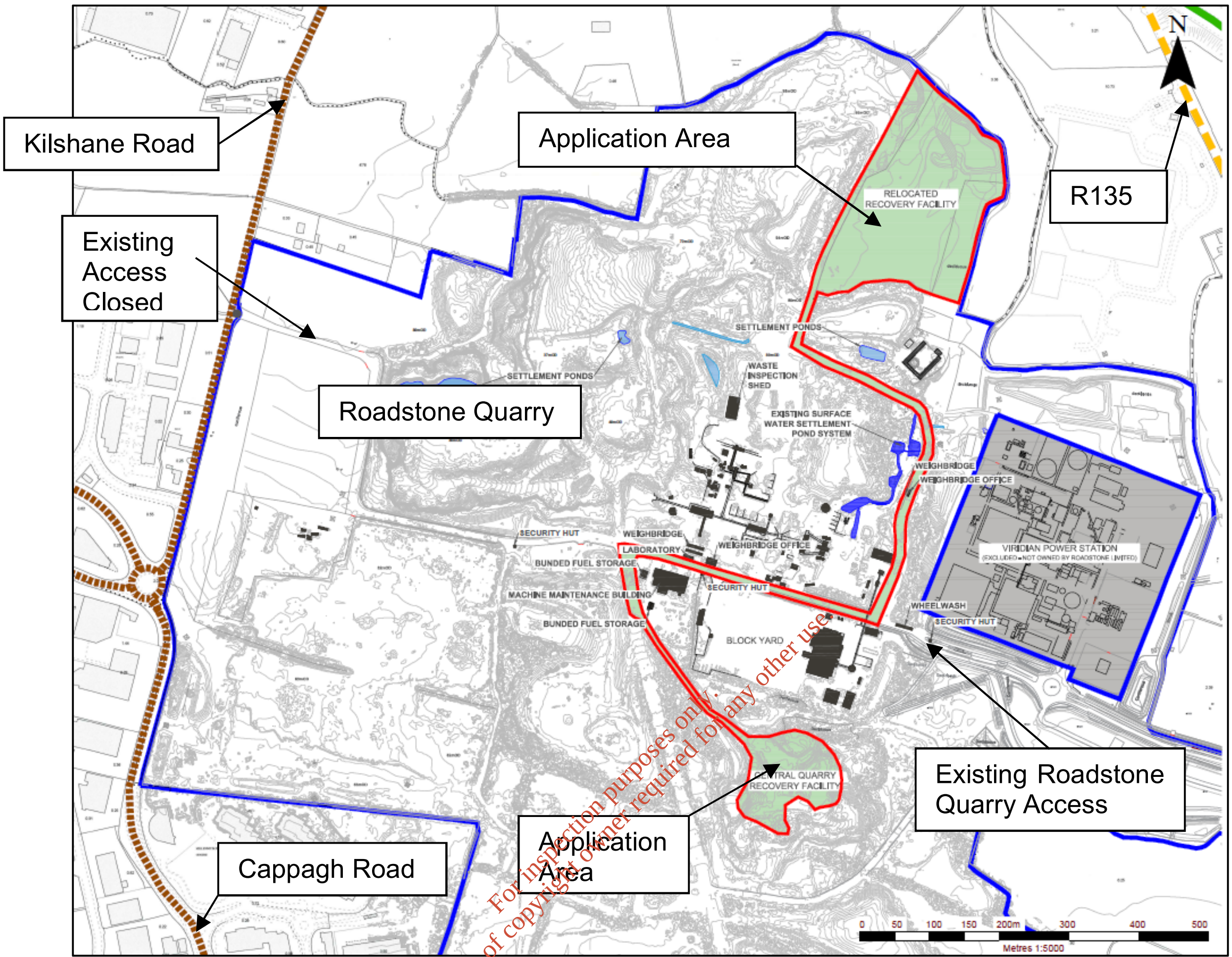
## Existing Development

13.4 Existing development at Huntstown Quarry is primarily tied to ongoing rock extraction and processing. In addition to established quarrying activities, several associated value-added activities are undertaken at the quarry, including production of concrete blocks and readymix concrete. A large soil recovery facility which is also operating within the quarry complex has a permitted soil waste intake of 1,500,000 tonnes per annum.

13.5 The quarry and application site are located within the townlands of Huntstown and Kilshane, Co. Dublin, approximately 2.5km north-west of the Dublin suburb of Finglas and 2km north-west of the interchange between the N2 Dual Carriageway and the M50 Motorway. Positioned north of the M50 motorway, the quarry has two access points: the primary entrance located on the eastern boundary of the Roadstone property holding, located off the R135 Regional Road, also known as the North Road, and a secondary access (which has been closed in recent years and is no longer in use), located on the western boundary of the property, along the Kilshane Road. The location of the application site, and both existing accesses, are shown on Figure 13-1.

13.6 The existing site infrastructure at the quarry complex includes internal haul roads, offices and staff welfare facilities, plant storage and maintenance sheds, refuelling facilities and crushing, grading and processing plant used to process blasted rock.

**Figure 13-1**
**Site Location Map**






## Proposed Development

13.7 This application relates to a proposal to increase the permitted rate of C&D waste intake/ recovery at the existing C&D recovery facility at Huntstown Quarry, from a maximum of 24,950 tonnes per annum at present to a maximum of 95,000 tonnes per annum in future years. It is also proposed to transfer the C&D waste recovery activities from its current location at the Central Quarry to a replacement site in the north-eastern corner of the quarry complex.

## Existing Site Access

13.8 Huntstown Quarry is currently accessed via the North Road (R135). The access road leading from North Road to the quarry complex is shared by quarry traffic and traffic going to and from the soil recovery facility and Huntstown Power Station. The access road is approximately 7.3m wide at the site entrance and divides as it runs towards the principal quarries and waste recovery facility. The widths of the inbound and outbound lanes are approximately 3.7m.

## Proposed Site Access

13.9 This application is tied to a previous grant of planning permission and an established C&D waste recovery facility which has operated under a Local Authority waste permit for many years. All of the proposed increase in C&D waste intake and export of recycled aggregate will be carried via the existing entrance and access road leading off the R135 North Road, located on the eastern side of the Huntstown Quarry complex. The former access road from the Kilshane Road to the west of the quarry complex will not be used.

## Information Reviewed

13.10 In preparing this assessment, Roadplan Consulting has made reference to:

- the *Fingal Development Plan 2011 – 2017,*
- The Institute of Highways and Transportation *Guidelines on the Preparation of Traffic Impact Assessments,*
- the *TII Transport Assessment Guidelines,*
- the *TII National Traffic Model*.

## Existing Road Network

13.11 The existing road network within the vicinity of the application site is illustrated in Figure 13-1 and is described further below.

13.12 The existing road network around the recovery facility and application site is defined by:

- The R135 regional road to the east, which previously served as the N2 National Primary Road (up to May 2006). This road is known locally as the North Road. It intersects with the N2 Dual carriageway at the Cherryhound Interchange to the north and forms a cul-de-sac to the south (severed by the re-aligned N2);
- a local road, known as the Kilshane Road (or Cappagh Road) to the west and north of the Huntstown quarry complex; and
- The M50 Motorway which lies south of the existing quarry.



13.13 The N2 Dual Carriageway between the M50 Motorway and Cherryhound Interchange runs immediately east of the R135 Regional Road. It continues northwards from the Cherryhound Interchange as the M2 Motorway to the north of Ashbourne Co. Meath. From there, it becomes the N2 National Primary Road and continues northwards as a single carriageway road through the counties of Meath, Louth and Monaghan to the border with Northern Ireland.

13.14 In relation to the local road network, the application site and the Huntstown Quarry complex in general, is located to the north of the M50 motorway, west of the R135 Regional Road (North Road) and the N2 Dual Carriageway and east and south of the Kilshane Road.

13.15 Much of the road network around the application site has been upgraded in recent years. The N2 dual carriageway / M2 motorway opened in May 2006 and led to a large and immediate reduction in traffic levels along the former N2 National Primary Road (now the R135 Regional Road) immediately east of Huntstown Quarry. Upgrading of the M50 to provide three lanes of traffic in both directions was also completed in 2010, as was the upgrading of its interchange with the N2 dual carriageway at Finglas to provide for a free-flow interchange.

13.16 The existing R135 (North Road) comprises of a single carriageway road generally of about 7.5m width with hard shoulders of varying width. The alignment essentially runs straight from the existing quarry entrance northwards up to the N2 / M2 motorway at the Cherryhound interchange and southwards to the point at which it is severed by the M50 motorway at Finglas.

13.17 A speed limit of 50kph applies along the existing R135 regional road. This speed limit applies to traffic which travels between the R135 / N2 roundabout junction and the existing entrance to the quarry complex at Huntstown.

## Methodology

13.18 HGV traffic travelling to the recovery facility via Dublin City and the N2 National Primary Road and/or M50 motorway to the south will access it via the R135 / N2 Slip Road priority junction at Coldwinters. HGV traffic travelling to the facility from the N2 or N3 to the north and north-west will travel via the R135 / N2 Roundabout junction at the Cherryhound Interchange.

13.19 HGV traffic departing the recovery facility with recycled aggregates and travelling toward the city and M50 motorway will initially travel via the R135 / Elm Road signalised junction and turn back onto the southbound carriageway of the N2 dual carriageway. HGV traffic departing the facility and travelling towards the N2 Dual Carriageway northbound or the N3 will travel via the R135 / N2 Roundabout junction.

13.20 Having regard to the established / future pattern of traffic movements, the methodology adopted for this assessment is summarised as follows:

- A 12-hour Manual Classified Traffic Counts was undertaken by Tracsis Traffic and Data Services on the 22nd of June 2016. Count information was obtained at the following junctions (shown on Figure 13-1):
  1. R135 / N2 Slip Road Priority Junction at Coldwinters
  2. R135 / Elm Road Signalised Junction at Newtown
  3. R135 / L3125 Kilshane Cross Signalised Junction
  4. R135 / N2 Roundabout Junction (link to Cherryhound Interchange)
- Existing Traffic Assessment – A spreadsheet model was created which contains the base year do-nothing traffic count data described above. The traffic count data was used to develop a PICADY model of the R135 / N2 Slip Road priority junction, an ARCADY model of the R135 / N2 roundabout junction and an OSCADY PRO model of the R135 / Elm Road signalised junction and the R135 / L3125 signalised junction.
- Future Year Assessment – The estimated future year traffic volumes on the study area road network, as a result of the increase in background traffic and additional development related traffic was used to assess the future operational performance of the junctions at the year of opening (2017), five years after (2022) and fifteen years after opening (2032).

# THE EXISTING ENVIRONMENT

## Existing Traffic Flows

13.21 The 12-hour traffic flows for each junction are provided in Appendix 13-A – Traffic Count Data. Traffic flows along the R135 were recorded for the four junctions identified previously. The daily profile of traffic flow at each junction along the R135 is shown in the figures below, as is the percentage of each vehicle class. The traffic flows during the busiest AM and PM peak hours were also abstracted from the surveyed data and are shown in the tables below:

**Figure 13-2**
**R135 / N2 Slip Road Priority Junction Traffic Profile**

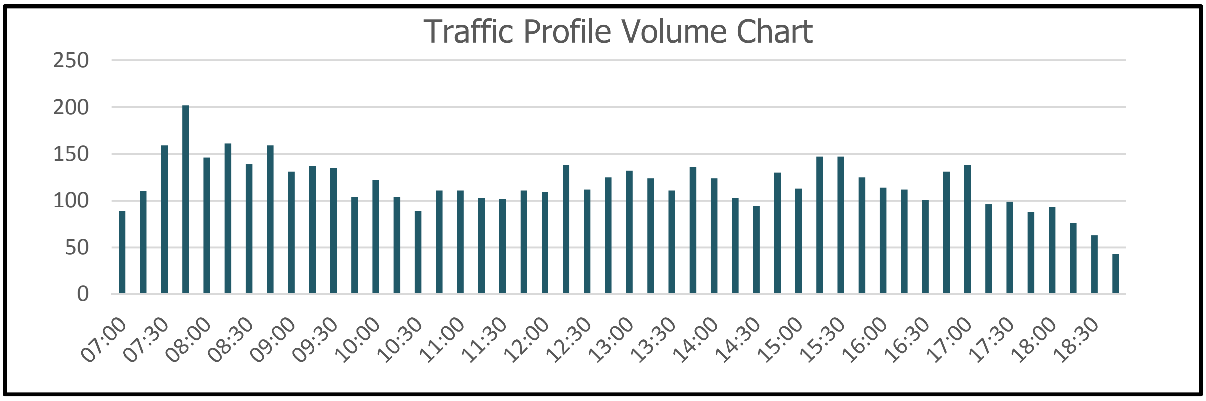



**Figure 13-3**
**R135 / N2 Slip Road Priority Junction Vehicle Percentages**

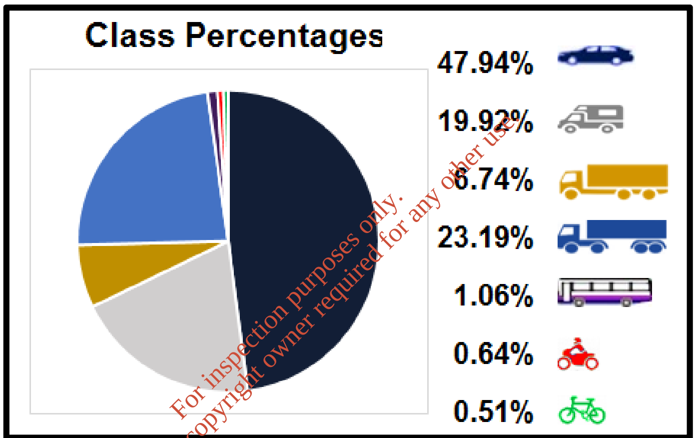





**Table 13-1**
**2016 AM Peak Existing (07:30 – 08:30)**

| From / To | R135 (North) | N2 Slip Rd | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | | 0 | 58 | **58** |
| N2 Slip Rd | 396 | | 128 | **524** |
| R135 (South) | 86 | 0 | | **86** |
| **Totals** | **482** | **0** | **186** | **668** |

**Table 13-2**
**2016 PM Peak Existing (16:45 – 17:45) –**

| From / To | R135 (North) | N2 Slip Rd | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | | 0 | 20 | **20** |
| N2 Slip Rd | 308 | | 20 | **328** |
| R135 (South) | 116 | 0 | | **116** |
| **Totals** | **424** | **0** | **40** | **464** |

Principal features of the existing traffic flows at the R135 / N2 Slip Road priority junction are as follows:

- Overall flows are higher in the am peak compared to the pm peak, with the main traffic flows travelling along the N2 Slip Road;
- The N2 slip is one-way only with turning from the R135 Regional Road prohibited;
- The percentage of HGV movement is high with HGVs comprising approximately 30% of traffic travelling through the junction.

13.22 The daily profile of traffic flow at for the R135 / Elm Road signalised junction is shown in the figures below, as is the percentage of each vehicle class. The traffic flows during the busiest AM and PM peak hours were abstracted from the surveyed data and are shown in the tables below:

**Figure 13-4**
**R135 / Elm Road Signalised Junction**

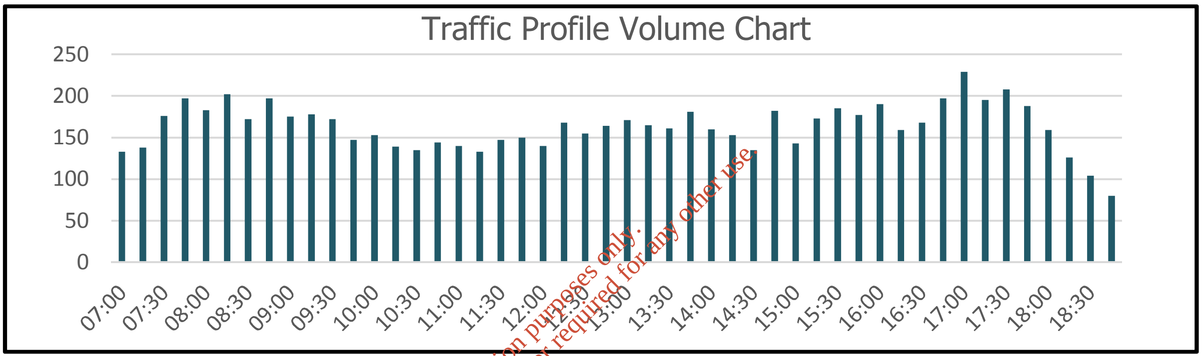



**Figure 13-5**
**R135 / Elm Road Signalised Junction Vehicle Percentages**

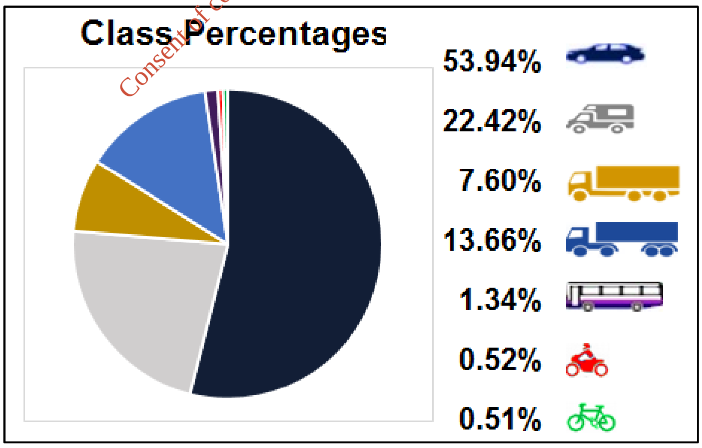


**Table 13-3**
**2016 AM Peak Existing (07:30 – 08:30)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | | 230 | 63 | **293** |
| Elm Road | 21 | | 3 | **24** |
| R135 (South) | 319 | 122 | | **441** |
| **Totals** | **340** | **352** | **66** | **758** |

**Table 13-4**
**2016 PM Peak Existing (16:45 – 17:45)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | | 313 | 21 | **334** |
| Elm Road | 29 | | 2 | **31** |
| R135 (South) | 320 | 144 | | **464** |
| **Totals** | **349** | **457** | **23** | **829** |

Principal features of the existing traffic flows at the R135 / Elm Road Signalised junction are as follows:

- Overall flows are slightly higher in the pm peak compared to the am peak;
- Traffic volumes turning from Elm Road are low in both the am and pm peak;
- The R135 / Elm Rd junctions provides access to the N2 for vehicles travelling southbound only;
- The percentage of HGV movement is high with HGVs comprising approximately 21% of traffic travelling through the junction.

13.23 The daily profile of traffic flow at for the R135 / L3125 Kilshane crossroads signalised junction is shown in the figures below, as is the percentage of each vehicle class. The traffic flows during the busiest AM and PM peak hours were abstracted from the surveyed data and are shown in the tables below:

**Figure 13-6**
**R135 / L3125 Signalised Junction Traffic Profile**

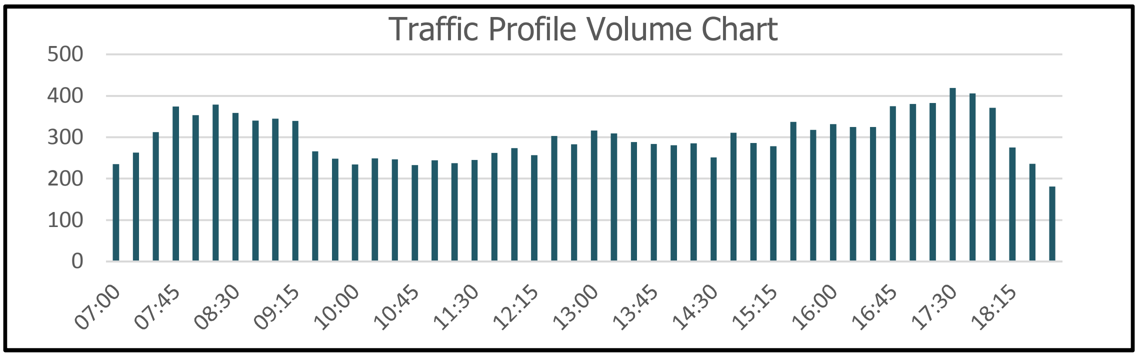


**Figure 13-7**
**R135 / L3125 Signalised Junction Vehicle Percentages**

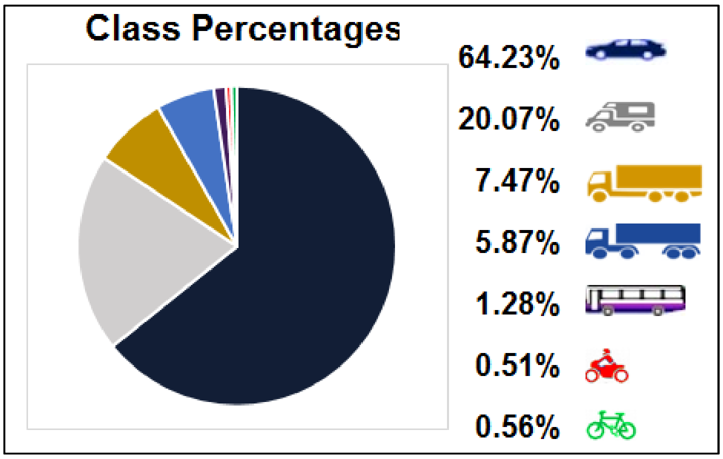



**Table 13-5**
**2016 AM Peak Existing (07:30 – 08:30)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | | 219 | 117 | 29 | **365** |
| L3125 (East) | 82 | | 90 | 320 | **492** |
| R135 (South) | 59 | 73 | | 205 | **337** |
| L3125 (West) | 9 | 134 | 81 | | **224** |
| **Totals** | **150** | **426** | **288** | **554** | **1418** |



**Table 13-6**
**2016 PM Peak Existing (16:45 – 17:45)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | | 168 | 86 | 16 | **270** |
| L3125 (East) | 204 | | 85 | 199 | **488** |
| R135 (South) | 111 | 120 | | 110 | **341** |
| L3125 (West) | 22 | 273 | 163 | | **458** |
| **Totals** | **337** | **561** | **334** | **325** | **1557** |

Principal features of the existing traffic flows at the existing R135 / L3125 Signalised junction are as follows;

- Overall flows are slightly higher in the pm peak compared to the am peak;
- The traffic flow travelling along the L3125 local road is higher than that along the R135 Regional Road;
- The L3125 provides access to Ballycoolin Industrial estate to the west and Dublin airport to the east.

13.24 The daily profile of traffic flow at for the R135 / N2 roundabout junction is shown in the figures below, as is the percentage of each vehicle class. The traffic flows during the busiest AM and PM peak hours were abstracted from the surveyed data and are shown in the tables below:

**Figure 13-8**
**R135 / N2 Roundabout Junction Traffic Profile**

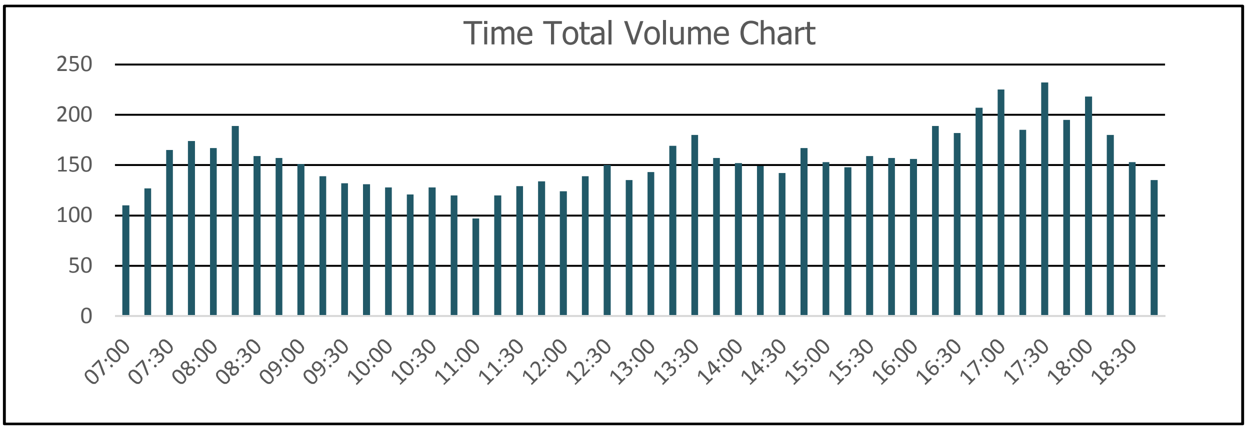



**Figure 13-9**
**R135 / L3125 Signalised Junction Vehicle Percentages**

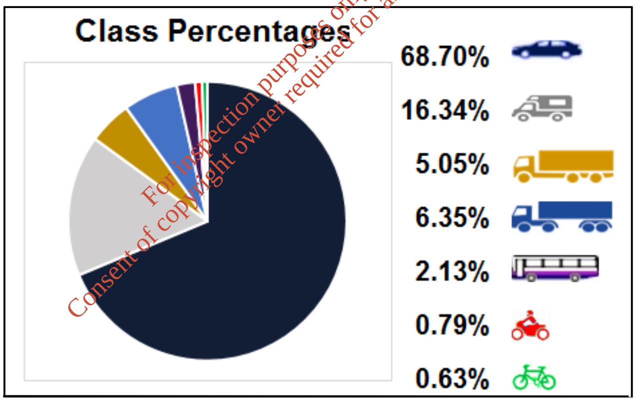





**Table 13-7**
**2016 AM Peak Existing (07:30 – 08:30)**

| From / To | R135 (North) | R135 (South) | N2 Slip Rd | Totals |
|---|---|---|---|---|
| R135 (North) | | 170 | 139 | **309** |
| R135 (South) | 48 | | 88 | **136** |
| N2 Slip Rd | 63 | 186 | | **249** |
| **Totals** | **111** | **356** | **229** | **694** |

**Table 13-8**
**2016 PM Peak Existing (16:45 – 17:45)**

| From / To | R135 (North) | R135 (South) | N2 Slip Rd | Totals |
|---|---|---|---|---|
| R135 (North) | | 111 | 86 | **197** |
| R135 (South) | 185 | | 175 | **360** |
| N2 Slip Rd | 127 | 160 | | **278** |
| **Totals** | **312** | **271** | **261** | **844** |

Principal features of the existing traffic flows at the R135 / N2 Roundabout junction are as follows:

- Overall flows are slightly higher in the pm peak compared to the am peak;
- The flows along the N2 Slip Road are low.

## Non-Car Access / Transport

13.25 To ascertain opportunities for sustainability, consideration has been given to non-car accessibility for the application site.

13.26 Although operation of the facility will be very dependent on road based haulage, staff will require transport means to get to and from work. Non-car accessibility will help reduce traffic impact and also promote social inclusion by providing means of transport to the application site to those who do not have access to a private car.



13.27 Access to the application site on foot is by way of the existing pedestrian footway situated to the eastern side of North Road. At approximately 1.5m in width, this footway extends along North Road northwards until reaching the northbound N2 Slip Road / North Road priority junction where it terminates. Pedestrians can then utilise the footpath situated to the western side of the R135 which extends for a short distance in the direction of Cherryhound interchange before terminating at a bus stop. For employees wishing to access this bus stop on foot, it is an approximate distance of 1.8 kilometres away or a 25 minute walk (based upon an average walking distance of 1.2m per second.)

13.28 A large number of residential dwellings can be reached within a 5 kilometre cycle from the recovery facility which, assuming an average speed of 15kmh, equates to a 20 minute cycle ride. This includes the northern suburbs of Santry, Finglas, Charlestown, Dunsink and Castlenock and settlements to the north of the M50 Blanchardstown, Mulhuddart and Tyrellstown.

13.29 Adequate provision has already been made for pedestrians and cyclists within the visitor area with internal pedestrian walkways segregated from vehicles and cycle parking provided for those members of staff (or visitors) wishing to travel via bicycle. Whilst the Applicant is limited by what can realistically be undertaken to further improve non-car accessibility within the quarry complex, should the development proposal give rise to an increase in members of staff / visitors wishing to travel via bicycle then additional bicycle parking can be provided.

13.30 The closest bus stop to the application site is situated on the North Road (R135), to the north of the N2 off-slip. The bus stop is a simple flag-post stop which is served by the Number 103 and 107 services operated by Bus Eireann. Both of the routes that service the bus stop run from Dublin to surrounding towns and villages.

13.31 The Number 103 service runs between Dublin City and Ashbourne / Ratoath. The service operates 7 days a week and begins at 06:30 in the morning and runs at approximately 20 minute intervals throughout the day until approximately midnight.

13.32 The Number 107 service runs between Dublin City and Navan, Nobber and Kells. The service operates 7 days a week and begins at 09:00 in the morning and runs at least four services in either direction throughout the day.

13.33 As identified above the local bus service is limited; however there are regular 20 minute services available from central Dublin throughout the day, seven days per week. Individual travel by bus to the application site is therefore a realistic alternative to the car.

## Site Access Sightlines

13.34 The requirements for sightlines are stated in the TII Design Manual for Urban Roads and Streets. Sightlines are measured along the mainline from a driver's viewing position on the access road, 3.0m back from the mainline edge.

13.35 Access to the development is from the existing Roadstone Quarry Access onto the R135. The posted speed limit of the R135 at the existing access to the quarry is 50kph. The existing access provides a sightline in excess of 200m in each direction when assessed in accordance with the DMURS.



## Accident History

13.36 Accident data has been obtained from the Road Safety Authority website www.rsa.ie. The website provides an interactive online mapping tool which has been navigated to the area of interest in order to determine the local accident history.

13.37 Accident data covering a nine year period 2005 to 2013 is provided. The information is rudimentary and only provides the number of collisions and the seriousness of the collisions, along with basic details of each incident. The definitions of the severities are given below:

- Fatal (a crash resulting in death)
- Serious (detention in hospital: includes paralysis, fractures and severe lacerations)
- Minor (includes whiplash, strains and minor lacerations)

13.38 No accidents were recorded at the existing access to the quarry. Two minor accidents were recorded south of the existing access and one minor accident was recorded north of the existing access. At the existing R135 / Elm Road signalised junction one minor accident was recorded.

13.39 At the existing R135 / L3125 signalised junction (Kilshane Cross), one fatal accident, one serious accident and eight minor accidents were recorded. A summary of the collision history broken down into vehicle type is provided in Table 13.9 below:

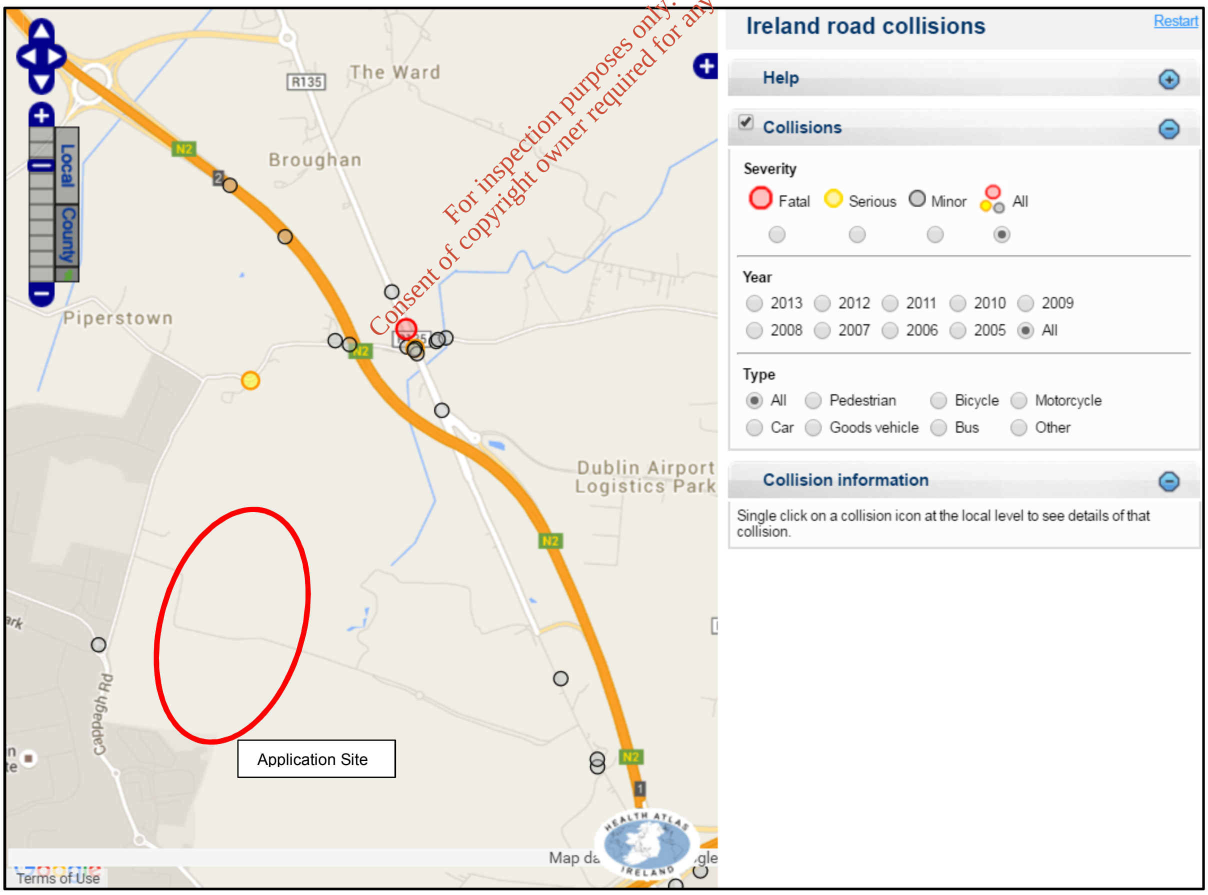
**Table 13-9**
**Road Collision History**

| Vehicle Type | Fatal Collision | Serious Collision | Minor Collision | All Collision |
|---|---|---|---|---|
| **Bus** | 0 | 0 | 0 | 0 |
| **Goods Vehicle** | 0 | 1 | 2 | 3 |
| **Car** | 0 | 0 | 6 | 6 |
| **Motorcycle** | 1 | 0 | 4 | 5 |
| **Bicycle** | 0 | 0 | 0 | 0 |
| **Pedestrian** | 0 | 0 | 0 | 0 |
| **Other** | 0 | 0 | 0 | 0 |
| **Total** | 1 | 1 | 12 | 14 |

13.40 The location of each collision is shown in Figure 13.10 below

**Figure 13-10**
**Road Collisions**





## Proposed Road Network Improvements

13.41 Fingal County Council has future proposals to provide a western link from the R135 / N2 roundabout to Dublin Airport. This road scheme is set as a development objective in the Airport Local Area Plan.

13.42 It is envisaged that existing traffic flows at the R135 / L3125 Kilshane Crossroad signalised junction will significantly reduce pending the construction of the airport link road scheme due to re-distribution of traffic flows.

# IMPACT OF THE PROPOSED DEVELOPMENT

## Future Trip Generation

13.43 The proposed development will generate an increase in the rate of C&D waste recovery intake from 24,950 tonnes per annum to 95,000 tonnes per annum (an increase of 70,050 tonnes per annum).

13.44 The existing quarry and recovery facility operate between 08:00 to 19:00 on Monday to Friday and between 08.00 hours and 13.00 hours on Saturdays. It will operate / open on approximately 300 days per annum (based on 6 days a week for 50 weeks).

13.45 It is anticipated that the waste material will arrive in 18 tonne consignments. Table 13.10 below provides a forecast of the average weekday traffic that is anticipated to be generated by the proposed increase of waste material intake.

13.46 In addition, it is expected that the recovery facility will produce up to 90,000 tonnes of recycled (secondary) aggregate per annum to be exported off-site from the C&D waste recovery facility.

13.47 It is anticipated that the secondary aggregate will be exported off-site in 18 tonne consignments. Table 13.10 below provides a forecast of the average weekday traffic that is anticipated to be generated by the proposed export of secondary aggregate from the C&D waste recovery facility.



**Table 13-10**
**Future Trip Generation**

| | Volume (Tonnes) | Annual Loads (HGVs) | Average Daily Loads (HGVs) | Average Hourly Loads (HGVs) |
|---|---|---|---|---|
| OPERATION Waste Recovery Material Intake (18t) | 70,050 | 3,900 | 13 | 1 |
| OPERATION Export of Recycled Aggregate (18t) | 95,000 | 5,300 | 18 | 2 |

## Distribution and Assignment

13.48 Table 13-10 above indicates that the average increase in daily trip generation of HGV traffic as a result of the increase in waste recovery material intake and the export of secondary aggregate is 31 HGV loads per day. This equates to a total of 62 HGV movements per day (two-way trips).

13.49 The proposed development will be operational for approximately 11 hours per day with a total of 31 additional trips per day. Therefore for a 1 hour period there will be approximately 3 trip per hour (31 trips / 11 hours) arriving and departing from the proposed development. The table below shows the expected AM and PM peak flows to and from the development.

**Table 13-11**
**Peak hour Flows**

| | Trips to Development | Trips from Development |
|---|---|---|
| AM Peak | 3 | 3 |
| PM Peak | 3 | 3 |

13.50 It is envisaged that all HGV's importing C&D waste material and exporting recycled (secondary) aggregate to/from the recovery facility at the Huntstown quarry complex will approach it along the M50 Motorway and / or the N2 Dual Carriageway and enter the site using the existing North Road entrance.

13.51 As such, all the proposed development traffic within the assessment have been distributed in line with the existing traffic patterns as surveyed.

## Other Planned Developments

13.52 Planning permission was granted in November 2016 for an increase in the rate of soil and stone importation to the adjoining soil waste recovery facility at Huntstown from 750,000 tonnes per annum to 1,500,000 tonnes per annum (Fingal County Council Ref. No FW16A/0120). This activity will generate approximately 130 ***additional*** trips per day (based on working 6 days a week for 50 weeks, arriving and departing in 20 tonne consignments). If it operates at maximum capacity, the permitted soil recovery and restoration activities at the North Quarry and West Quarry would be completed in around 6 years.



13.53 Planning has previously been granted to Roadstone for a total aggregate and concrete output of up to 2 million tonnes per annum from the established quarry operations over a 20 year period from 2014 (Fingal County Council Ref. No FW12A-0022 and An Bord Pleanala Ref. No. 06F.241693). The proposed development will generate approximately 330 trips per day (based on working 6 days a week for 50 weeks, arriving and departing in 20 tonne consignments).

13.54 Planning permission has also been granted for a proposed Anaerobic Digestion (AD) Facility at Huntstown Quarry. (Planning Ref. FW13A/0089). The proposed development will generate approximately 60 trips per day. Access to the proposed AD facility will be via the existing R135 / Quarry Access priority junction.

13.55 Sensitivity testing of the above developments has been carried out to show the impact these development will have on the existing road network when the C&D waste recovery facility development is operational.

## Traffic Increase

13.56 The TII issues a range of traffic growth factors to be applied to existing traffic flows which are broken down into three groups; low growth, medium growth and high growth. Due to the close proximity of the M50 motorway and the N2 dual carriageway it is assumed that medium growth is most likely for the R135 regional road.

13.57 The zone in which the site is located is numbered 821 in the TII National Traffic Model. The medium growth factors for each operational phase are as follows:

**Table 13-12**
**Future Year Traffic Growth**

| Road | 2016 Existing | 2017 Development Operational | 2022 Development Operational | 2032 Development Operational |
|---|---|---|---|---|
| All Roads | 1.00 | + 0.71% | + 4.36% | + 8.59% |

13.58 These percentages have been used to predict the increase in background traffic along the R135 that will occur in future years. It should be noted that these growth factors do not apply to predicted trips generated by the development. Full summary tables and predicted future traffic flows for 2017, 2022 and 2032 future years are included in Appendix 13B – Traffic Flow Sheets.

## Junction Capacity Assessment

13.59 Capacity assessments using the computer programme PICADY for the existing R135 / N2 Slip Road priority junction and ARCADY for the existing R135 / N2 roundabout junction has been carried out. Full details and results of capacity assessments are contained in Appendix 13C – PICADY Results and in Appendix 13D – ARCADY Results



13.60 The parameters shown in the tables are defined as follows:

- **Ratio of Flow to Capacity (RFC)** is a factor indicating the flow on a junction arm relative to its capacity. An RFC of 1.0 means the junction has reached its ultimate capacity and an RFC of 0.85 means that the junction has reached its reserve capacity.
- **Avg. Queue** is the average number of vehicles queued over the time period on the junction approach.
- **Queue delay** is the average number of seconds delay to each vehicle in the time period.
- **Total Delay** is the total number of vehicle hours of delay to all vehicles at the junction over the time period.

*R135 / N2 Slip Road Priority Junction*

13.61 The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing R135 / N2 Slip Road priority junction at Coldwinters.

**Table 13-13**
**R135 / N2 Slip Road Priority Junction : AM Peak**

| AM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 Sens Flows | 2032 No Dev | 2032 With Dev | 2032 Sens Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / N2 Slip Road Priority Junction | R135 North | RFC value | - | - | - | - | - | - | - | - | - |
| | | Average Queue (Vehicles) | - | - | - | - | - | - | - | - | - |
| | | Average delay (sec / veh) | - | - | - | - | - | - | - | - | - |
| | | Total Delay (veh / min) | - | - | - | - | - | - | - | - | - |
| | N2 Slip Road | RFC value | 0.87 | 0.87 | 0.88 | 0.90 | 0.91 | 0.96 | 0.95 | 0.95 | 0.98 |
| | | Average Queue (Vehicles) | 6 | 6 | 6 | 7 | 7 | 11 | 10 | 10 | 14 |
| | | Average delay (sec / veh) | 28 | 28 | 29 | 32 | 33 | 45 | 40 | 41 | 60 |
| | | Total Delay (veh / min) | 5.12 | 5.29 | 5.39 | 6.36 | 6.51 | 9.60 | 8.53 | 8.82 | 11.89 |
| | R135 South | RFC value | - | - | - | - | - | - | - | - | - |
| | | Average Queue (Vehicles) | - | - | - | - | - | - | - | - | - |
| | | Average delay (sec / veh) | - | - | - | - | - | - | - | - | - |
| | | Total Delay (veh / min) | - | - | - | - | - | - | - | - | - |



**Table 13-14**
**R135 / N2 Slip Road Priority Junction : PM Peak**

| AM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 Sen Flows | 2032 No Dev | 2032 With Dev | 2032 Sen Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / N2 Slip Road Priority Junction | R135 North | RFC value | - | - | - | - | - | - | - | - | - |
| | | Average Queue (Vehicles) | - | - | - | - | - | - | - | - | - |
| | | Average delay (sec / veh) | - | - | - | - | - | - | - | - | - |
| | | Total Delay (veh / min) | - | - | - | - | - | - | - | - | - |
| | N2 Slip Road | RFC value | 0.68 | 0.69 | 0.69 | 0.72 | 0.72 | 0.74 | 0.75 | 0.75 | 0.76 |
| | | Average Queue (Vehicles) | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | | Average delay (sec / veh) | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 20 | 21 |
| | | Total Delay (veh / min) | 2.13 | 2.16 | 2.18 | 2.38 | 2.39 | 2.51 | 2.65 | 2.67 | 2.93 |
| | R135 South | RFC value | - | - | - | - | - | - | - | - | - |
| | | Average Queue (Vehicles) | - | - | - | - | - | - | - | - | - |
| | | Average delay (sec / veh) | - | - | - | - | - | - | - | - | - |
| | | Total Delay (veh / min) | - | - | - | - | - | - | - | - | - |

13.62 Tables 13-13 and 13-14 above indicate that at present the R135 / N2 Slip Road priority junction operates at capacity with queues and delays during the AM peak hour. During the PM peak hour, the junction will operate within capacity with small queues and delays.

13.63 Queues were noted at the junction and a maximum queue of 8 vehicles were noted at the junction during the counts which correlates with the junction assessment.

13.64 With the proposed development in place in 2017, 2022 and 2032, the junction will operate at capacity with queues and delays during the AM peak hour. During the PM peak hour the junction will operate within capacity with small queues and delays.

13.65 In 2032 during the AM peak hour the junction has a maximum queue of 10 vehicles. The slip road from the N2 is approximately 200m in length and it is unlikely that vehicles will queue back to the N2 dual carriageway.

13.66 Sensitivity testing on other committed and other planned development was carried out with the proposed development in place in 2017, 2022 and 2032. The junction will operate at capacity with queues and delays during the AM peak hour. During the PM peak hour the junction will operate within capacity with small queues and delays.

### *R135 / N2 Link Road Roundabout Junction*

13.67 The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing R135 / N2 Link Road priority junction.



**Table 13-15**
**R135 / N2 Link Road Roundabout Junction : AM Peak**

| AM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 Sen Flows | 2032 No Dev | 2032 With Dev | 2032 Sen Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / N2 Link Road Roundabout Junction | R135 North | RFC value | 0.22 | 0.22 | 0.23 | 0.23 | 0.23 | 0.25 | 0.24 | 0.24 | 0.26 |
| | | Average Queue (Vehicles) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Average delay (sec / veh) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | Total Delay (veh / min) | 0.33 | 0.34 | 0.35 | 0.36 | 0.36 | 0.39 | 0.37 | 0.38 | 0.40 |
| | R135 South | RFC value | 0.09 | 0.10 | 0.10 | 0.10 | 0.10 | 0.12 | 0.10 | 0.10 | 0.12 |
| | | Average Queue (Vehicles) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Average delay (sec / veh) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | Total Delay (veh / min) | 0.12 | 0.13 | 0.13 | 0.13 | 0.13 | 0.16 | 0.14 | 0.14 | 0.16 |
| | N2 Link Road | RFC value | 0.18 | 0.18 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.20 | 0.20 |
| | | Average Queue (Vehicles) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Average delay (sec / veh) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | Total Delay (veh / min) | 0.26 | 0.26 | 0.27 | 0.27 | 0.27 | 0.27 | 0.29 | 0.29 | 0.29 |

**Table 13-16**
**R135 / N2 Link Road Roundabout Junction : PM Peak**

| PM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 Sen Flows | 2032 No Dev | 2032 With Dev | 2032 Sen Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / N2 Link Road Roundabout Junction | R135 North | RFC value | 0.13 | 0.14 | 0.14 | 0.14 | 0.14 | 0.16 | 0.15 | 0.15 | 0.16 |
| | | Average Queue (Vehicles) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Average delay (sec / veh) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | Total Delay (veh / min) | 0.18 | 0.19 | 0.19 | 0.20 | 0.20 | 0.22 | 0.21 | 0.21 | 0.22 |
| | R135 South | RFC value | 0.22 | 0.22 | 0.22 | 0.23 | 0.23 | 0.25 | 0.24 | 0.24 | 0.25 |
| | | Average Queue (Vehicles) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Average delay (sec / veh) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | Total Delay (veh / min) | 0.33 | 0.34 | 0.34 | 0.35 | 0.35 | 0.38 | 0.38 | 0.38 | 0.40 |
| | N2 Link Road | RFC value | 0.22 | 0.22 | 0.22 | 0.23 | 0.23 | 0.23 | 0.24 | 0.24 | 0.24 |
| | | Average Queue (Vehicles) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Average delay (sec / veh) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | Total Delay (veh / min) | 0.33 | 0.34 | 0.34 | 0.35 | 0.35 | 0.36 | 0.38 | 0.38 | 0.38 |



13.68 Tables 13-15 and 13-16 above indicate that at present the R135 / N2 Link Road roundabout junction will operate within capacity, with no queues and minimal delays during the AM and PM peak hours.

13.69 With the proposed development in place in 2017, 2022 and 2032 the roundabout junction will operate within capacity with no queues and minimal delays during the AM and PM peak hours.

13.70 Sensitivity testing was undertaken to model the impact of other permitted development with the proposed development in place in 2022 and 2032. These analyses indicated that the roundabout junction will operate within capacity, with no queues and minimal delays during AM and PM peak hours.

*Signalised Junctions*

13.71 Capacity assessments using the computer programme OSCADY PRO have also been carried out on the following junctions:

- R135 / Elm Road Signalised Junction
- R135 / L3125 Signalised Junction

13.72 Full details of the capacity assessments are contained in Appendix 13E – OSCADY PRO Results.

13.73 The parameters shown in the tables are defined as follows:

- **Max Degree of Saturation (%)** is a ratio of demand to capacity on each approach to the junction, with a value of 100% meaning that demand and capacity are equal and no further traffic is able to progress through the junction. Values over 90% are typically regarded as suffering from traffic congestion, with queues of vehicles beginning to form.

- **Queue at end of Red** is the number of vehicles queued on the approach arm at the end of red.
- **Average Delay** is the average number of seconds delay to each vehicle in the time period.
- **Practical Reserve Capacity** is the capacity available relative to a capacity of 90%. A positive PRC indicates that a junction has spare capacity and may be able to accept more traffic. A negative PRC indicates that the junction is over capacity and is suffering from traffic congestion.

*R135 / Elm Road Signalised Junction*

13.74 The following tables show the predicted degree of saturation, average queue lengths, average vehicle delay, total junction delays and practical reserve capacity for the existing R135 / Elm Road signalised junction.

**Table 13-17**
**R135 / Elm Road Signalised Junction : AM Peak**

| AM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 With Sens Flows | 2032 No Dev | 2032 With Dev | 2032 With Sens Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / Elm Road Signalised Junction | R135 North | Max DoS % | 28% | 29% | 29% | 30% | 30% | 31% | 31% | 31% | 32% |
| | | Q red (pcu's) | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 |
| | | Average delay (s) | 24 | 25 | 25 | 25 | 25 | 28 | 25 | 25 | 27 |
| | | PRC % | 219.81 | 213.13 | 212.13 | 202.50 | 201.57 | 190.85 | 195.14 | 189.97 | 180.55 |
| | N2 Slip Road | Max DoS % | 18% | 18% | 18% | 19% | 19% | 19% | 20% | 20% | 20% |
| | | Q red (pcu's) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | Average delay (s) | 56 | 56 | 57 | 57 | 57 | 57 | 57 | 57 | 57 |
| | | PRC % | 396.98 | 396.98 | 396.98 | 377.11 | 377.11 | 377.11 | 358.75 | 358.75 | 358.75 |
| | R135 South | Max DoS % | 29% | 29% | 29% | 30% | 30% | 31% | 32% | 32% | 32% |
| | | Q red (pcu's) | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | Average delay (s) | 29 | 28 | 28 | 28 | 28 | 28 | 29 | 29 | 29 |
| | | PRC % | 218.59 | 218.11 | 216.46 | 206.92 | 205.38 | 191.82 | 188.42 | 193.64 | 181.15 |

**Table 13-18**
**R135 / Elm Road Signalised Junction : PM Peak**

| PM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 With Sens Flows | 2032 No Dev | 2032 With Dev | 2032 With Sens Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / Elm Road Signalised Junction | R135 North | Max DoS % | 31% | 31% | 31% | 33% | 32% | 34% | 34% | 34% | 35% |
| | | Q red (pcu's) | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | Average delay (s) | 20 | 20 | 21 | 21 | 20 | 23 | 21 | 21 | 22 |
| | | PRC % | 193.95 | 192.36 | 187.66 | 174.14 | 180.97 | 165.20 | 166.81 | 166.14 | 157.61 |
| | N2 Slip Road | Max DoS % | 25% | 25% | 25% | 26% | 26% | 26% | 27% | 27% | 27% |
| | | Q red (pcu's) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | Average delay (s) | 59 | 59 | 59 | 59 | 59 | 59 | 60 | 60 | 60 |
| | | PRC % | 261.44 | 261.44 | 261.44 | 250.81 | 250.81 | 250.81 | 231.32 | 231.32 | 231.32 |
| | R135 South | Max DoS % | 31% | 32% | 32% | 33% | 33% | 34% | 34% | 34% | 35% |
| | | Q red (pcu's) | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | | Average delay (s) | 33 | 33 | 33 | 33 | 34 | 32 | 34 | 34 | 32 |
| | | PRC % | 189.15 | 185.94 | 191.94 | 173.79 | 175.23 | 164.92 | 166.68 | 165.30 | 162.20 |

13.75 Tables 13-17 and 13-18 above indicate that at present the R135 / Elm Road signalised junction operates within capacity with minimal queues and delays during the AM and PM peak hour

13.76 With the development in place in 2017, 2022 and 2032 the junction will continue to operate within capacity with minimal queues and delays during the AM and PM peak hour.

13.77 Sensitivity testing was undertaken to model the impact of other permitted development with the proposed development in place in 2022 and 2032. These analyses indicated that the signalised junction will operate within capacity, with no queues and minimal delays during the AM and PM peak hours.

13.78

*R135 / L3125 Kilshane Crossroads Signalised Junction*

13.79 The following tables show the predicted degree of saturation, average queue lengths, average vehicle delay, total junction delays and practical reserve capacity for the existing R135 / L3125 signalised junction at Kilshane Cross.

**Table 13-19**
**R135 / L3125 Signalised Junction : AM Peak**

| AM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 With Sens Flows | 2022 With Link Rd | 2032 No Dev | 2032 With Dev | 2032 With Sens Flows | 2032 With Link Rd |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / L3125 Signalised junction | R135 North | Max DoS % | 47% | 47% | 49% | 49% | 51% | 50% | 32% | 53% | 53% | 54% | 34% |
| | | Q red (pcu's) | 12 | 12 | 12 | 12 | 12 | 13 | 8 | 13 | 13 | 14 | 9 |
| | | Average delay (s) | 42 | 42 | 44 | 43 | 44 | 43 | 39 | 44 | 44 | 44 | 40 |
| | | PRC % | 92.75 | 91.34 | 83.93 | 84.99 | 77.84 | 79.79 | 178.98 | 70.97 | 70.58 | 68.97 | 167.01 |
| | L3125 East | Max DoS % | 84% | 85% | 85% | 90% | 89% | 90% | 86% | 92% | 92% | 94% | 90% |
| | | Q red (pcu's) | 17 | 17 | 17 | 19 | 19 | 19 | 17 | 21 | 20 | 23 | 19 |
| | | Average delay (s) | 51 | 51 | 54 | 59 | 59 | 59 | 55 | 61 | 61 | 79 | 65 |
| | | PRC % | 6.11 | 5.38 | 5.38 | -0.38 | 1.86 | -0.38 | 4.56 | -2.21 | -2.21 | -4.36 | 0.33 |
| | R135 South | Max DoS % | 84% | 85% | 88% | 88% | 90% | 91% | 84% | 94% | 94% | 95% | 87% |
| | | Q red (pcu's) | 12 | 12 | 13 | 13 | 14 | 15 | 12 | 15 | 15 | 18 | 14 |
| | | Average delay (s) | 95 | 97 | 103 | 100 | 110 | 97 | 72 | 88 | 89 | 109 | 79 |
| | | PRC % | 6.78 | 5.83 | 2.90 | 2.47 | -0.39 | -0.94 | 7.12 | -4.02 | -4.29 | -5.43 | 2.93 |
| | L3125 West | Max DoS % | 88% | 89% | 86% | 89% | 89% | 93% | 85% | 93% | 92% | 93% | 89% |
| | | Q red (pcu's) | 12 | 13 | 12 | 13 | 13 | 14 | 12 | 14 | 14 | 15 | 14 |
| | | Average delay (s) | 82 | 83 | 81 | 81 | 89 | 89 | 39 | 88 | 89 | 102 | 87 |
| | | PRC % | 1.30 | 0.66 | 4.94 | 1.09 | 1.40 | -2.74 | 5.54 | -2.77 | -2.77 | -2.77 | 1.19 |

13.80 Table 13.19 above indicates that at present the R135 / L3125 signalised junction at Kilshane Cross is operating at capacity with queues and delays during the AM peak hour.

13.81 With the development in place in 2017 the signalised junction will continue to operate at capacity with queues and delays during the AM peak hour.

13.82 With the development in place in 2022 and 2032 the junction will reach its maximum capacity with queues and delays forming during the AM peak hour.

13.83 It should be noted that without the proposed development in place in 2022 and 2032, the junction will have reached its maximum capacity with queues and delays forming during the AM peak hour.

13.84 Sensitivity testing of granted planning applications within the area indicates that the signalised junction will have reached its maximum capacity in 2022 and 2032, with queues and delays forming during the AM peak hour.

13.85 With the opening of the Western (Airport) Link Road from the R135 / N2 roundabout to Dublin Airport, the impact on the R135 / L3125 signalised junction will be reduced. For the purposes of this assessment it was assumed that 50% of the traffic flows travelling from the R135 North direction to the L3125 East and from the L3125 East direction to the R135 North would now travel via the Western Link Road. As a result, the signalised junction will operate within capacity in 2022 and 2032, with queues and delays during the AM peak hour.

**Table 13-20**
**R135 / L3125 Signalised Junction : PM Peak**

| PM Peak | | | 2016 | 2017 No Dev | 2017 With Dev | 2022 No Dev | 2022 With Dev | 2022 With Sens Flows | 2022 With Link Rd | 2032 No Dev | 2032 With Dev | 2032 With Sens Flows | 2032 With Link Rd |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R135 / L3125 Signalised junction | R135 North | Max DoS % | 44% | 44% | 43% | 46% | 45% | 46% | 29% | 46% | 46% | 49% | 29% |
| | | Q red (pcu's) | 9 | 9 | 9 | 10 | 10 | 10 | 6 | 9 | 10 | 10 | 6 |
| | | Average delay (s) | 47 | 47 | 46 | 53 | 53 | 54 | 42 | 46 | 46 | 47 | 42 |
| | | PRC % | 102.77 | 101.43 | 110.10 | 92.53 | 103.41 | 96.21 | 211.73 | 95.33 | 97.14 | 85.67 | 213.29 |
| | L3125 East | Max DoS % | 91% | 92% | 92% | 96% | 96% | 98% | 87% | 99% | 99% | 99% | 91% |
| | | Q red (pcu's) | 19 | 20 | 20 | 23 | 23 | 25 | 16 | 30 | 26 | 26 | 18 |
| | | Average delay (s) | 63 | 64 | 64 | 72 | 72 | 79 | 65 | 106 | 81 | 81 | 69 |
| | | PRC % | -1.40 | -2.41 | -2.41 | -6.26 | -6.29 | -8.46 | 3.22 | -9.38 | -9.38 | -9.38 | -1.35 |
| | R135 South | Max DoS % | 93% | 93% | 92% | 98% | 96% | 105% | 90% | 108% | 99% | 102% | 90% |
| | | Q red (pcu's) | 13 | 13 | 13 | 15 | 14 | 11 | 9 | 16 | 10 | 18 | 13 |
| | | Average delay (s) | 119 | 121 | 121 | 131 | 133 | 165 | 96 | 265 | 142 | 145 | 113 |
| | | PRC % | -3.47 | -4.14 | -4.93 | -8.25 | -6.90 | -14.13 | -0.05 | -17.33 | -9.19 | -12.11 | -0.55 |
| | L3125 West | Max DoS % | 89% | 90% | 93% | 94% | 97% | 94% | 88% | 97% | 100% | 101% | 91% |
| | | Q red (pcu's) | 15 | 15 | 17 | 18 | 19 | 18 | 15 | 21 | 22 | 22 | 17 |
| | | Average delay (s) | 73 | 74 | 82 | 82 | 92 | 82 | 42 | 113 | 100 | 100 | 73 |
| | | PRC % | 0.37 | -0.36 | -3.63 | -4.52 | -7.65 | -4.52 | 1.74 | -7.52 | -10.56 | -10.56 | -1.46 |



13.86 Table 13-20 above indicates that at present the R135 / L3125 signalised junction at Kilshane Cross operates outside capacity with queues and delays during the PM peak hour.

13.87 In 2017, 2022 and 2032 without the proposed development in place, the R135 / L3125 signalised junction operates outside capacity with queues and delays during the PM peak hour.

13.88 With the development in place in 2017, 2022 and 2032, the junction will continue to operate outside capacity, with queues and delays during the PM peak hour.

13.89 Sensitivity testing of granted planning applications within the area indicates that the signalised junction will have reached its maximum capacity in 2022 and 2032, with queues and delays forming during the AM peak hour.

13.90 With the opening of the Western (Airport) Link Road from the R135 / N2 roundabout to Dublin Airport, the impact on the R135 / L3125 signalised junction will be reduced. For the purposes of this assessment it was assumed that 50% of the traffic flows travelling from the R135 North direction to the L3125 East and from the L3125 East direction to the R135 North would now travel via the Western Link Road. As a result the signalised junction will operate within capacity in 2022 and 2032, with queues and delays during the PM peak hour.

## Road Capacity Assessment

13.91 A capacity assessment of the R135 has been undertaken to determine the impact the proposed development flows will have on the R135 Regional Road. The AM and PM peak hour traffic counts have been converted to AADT (Annual Average Daily Traffic) using the methodology in TII Project Appraisal Guidelines '*Unit 16.2 Expansion Factors for Short Period Traffic Counts*'.

13.92 The vehicle flows (Annual Average Daily Traffic) given in Table 6/1 of TD 9/12 of the Design Manual for Roads and Bridges represent the approximate two-way flows which correspond to Level of Service D in reasonably level terrain. This is the level of service at which passing becomes extremely difficult and begins to affect the overall flow of the road.

13.93 Table 6/1 of the TII TD 9/12 indicates that the R135 would be considered as a Type 2 Single Carriageway, with a capacity of 8,600 AADT for a Level of Service D.

13.94 The following tables calculate the existing AADT for the R135 and the future AADT for the R135 when the development is operational in the years 2017, 2022 and 2032.

**Table 13-21**
**2016 Existing Annual Average Daily Traffic**

**STEP 1:** Conversion of short period traffic counts to average daily traffic

| | Flows | PAG* factor | Daily flow (Flows/PAG*factor) | Average Daily traffic for 22nd June 2016 |
|---|---|---|---|---|
| AM peak (07:30 – 08:30) | 633 | 0.07 | 9,042 | 8,315 |
| PM peak (16:45 – 17:45) | 683 | 0.09 | 7,588 | |

* *Project Appraisal Guidelines*

**STEP 2:** Conversion of average daily traffic to weekly average daily traffic

| Average Daily traffic for 22nd June 2016 | PAG* factor | WADT *Weekly Average Daily Traffic* (Avg. Daily traffic * PAG factor) |
|---|---|---|
| 8,315 | 0.97 | 8,065 |

**STEP 3:** Conversion of weekly average daily traffic to annual average daily traffic)

| WADT | PAG* factor | **AADT** *Annually Average Daily Traffic* (WADT * PAG factor) |
|---|---|---|
| 8,065 | 0.96 | **7,742** |

13.95 From Table 13-21 above, the existing AADT for the R135 is 7,742 AADT which is below the recommended 8,600 AADT for a Level of Service D for a Type 2 Single Carriageway.

**Table 13-22**
**2017 Proposed Annual Average Daily Traffic with Development Flows**

| | | | | |
|---|---|---|---|---|
| **STEP 1:** Conversion of short period traffic counts to average daily traffic | | | | |
| | Flows | PAG* factor | Daily flow (Flows/PAG*factor) | Average Daily traffic for 22nd June 2017 |
| AM peak (07:30 – 08:30) | 639 | 0.07 | 9,128 | 8,402 |
| PM peak (16:45 – 17:45) | 691 | 0.09 | 7,677 | |
| ** Project Appraisal Guidelines* | | | | |
| **STEP 2:** Conversion of average daily traffic to weekly average daily traffic | | | | |
| Average Daily traffic for 22nd June 2017 | | PAG* factor | WADT *Weekly Average Daily Traffic* (Avg. Daily traffic * PAG factor) | |
| 8,402 | | 0.97 | 8,150 | |
| **STEP 3:** Conversion of weekly average daily traffic to annual average daily traffic) | | | | |
| WADT | | PAG* factor | **AADT** *Annually Average Daily Traffic* (WADT * PAG factor) | |
| 8,150 | | 0.96 | **7,824** | |

13.96 From Table 13-22 above, the AADT for the R135 in 2017 with the development fully operational is 7,824 AADT which is below the recommended 8,600 AADT for a Level of Service D for a Type 2 Single Carriageway.

**Table 13-23**
**2022 Proposed Annual Average Daily Traffic with Development Flows**

| | | | | |
|---|---|---|---|---|
| **STEP 1:** Conversion of short period traffic counts to average daily traffic | | | | |
| | Flows | PAG* factor | Daily flow (Flows/PAG*factor) | Average Daily traffic for 22nd June 2032 |
| AM peak (07:30 – 08:30) | 659 | 0.07 | 9,414 | 8,674 |
| PM peak (16:45 – 17:45) | 714 | 0.09 | 7,933 | |
| ** Project Appraisal Guidelines* | | | | |
| **STEP 2:** Conversion of average daily traffic to weekly average daily traffic | | | | |
| Average Daily traffic for 22nd June 2016 | | PAG* factor | WADT *Weekly Average Daily Traffic* (Avg. Daily traffic * PAG factor) | |
| 8,674 | | 0.97 | 8,414 | |
| **STEP 3:** Conversion of weekly average daily traffic to annual average daily traffic) | | | | |
| WADT | | PAG* factor | **AADT** *Annually Average Daily Traffic* (WADT * PAG factor) | |
| 8,414 | | 0.98 | **8,246** | |

13.97 From Table 13-23 above, the AADT for the R135 in 2022 with the development fully operational is 8,246 AADT which is below the recommended 8,600 AADT for a Level of Service D for a Type 2 Single Carriageway.

**Table 13-24**
**2032 Proposed Annual Average Daily Traffic with Development Flows**

<table>
<tr><td colspan="5">STEP 1: Conversion of short period traffic counts to average daily traffic</td></tr>
<tr><td></td><td>Flows</td><td>PAG* factor</td><td>Daily flow (Flows/PAG*factor)</td><td>Average Daily traffic for 22nd June 2032</td></tr>
<tr><td>AM peak (07:30 – 08:30)</td><td>688</td><td>0.07</td><td>9,828</td><td rowspan="2">9,036</td></tr>
<tr><td>PM peak (16:45 – 17:45)</td><td>742</td><td>0.09</td><td>8,244</td></tr>
<tr><td colspan="5">* Project Appraisal Guidelines</td></tr>
<tr><td colspan="5">STEP 2: Conversion of average daily traffic to weekly average daily traffic</td></tr>
<tr><td colspan="2">Average Daily traffic for 22nd June 2016</td><td colspan="2">PAG* factor</td><td>WADT<br>Weekly Average Daily Traffic<br>(Avg. Daily traffic * PAG factor)</td></tr>
<tr><td colspan="2">9,036</td><td colspan="2">0.97</td><td>8,765</td></tr>
<tr><td colspan="5">STEP 3: Conversion of weekly average daily traffic to annual average daily traffic)</td></tr>
<tr><td colspan="2">WADT</td><td colspan="2">PAG* factor</td><td>AADT<br>Annually Average Daily Traffic<br>(WADT * PAG factor)</td></tr>
<tr><td colspan="2">8,765</td><td colspan="2">0.98</td><td>8,590</td></tr>
</table>

13.98 From the table above the AADT for the R135 in 2032 with the development fully operational is 8,590 AADT which is below the recommended 8,600 AADT for a Level of Service D for a Type 2 Single Carriageway.

## PROPOSED MITIGATION MEASURES

13.99 It has been demonstrated in this chapter that the proposed development, involving increased intake and output to / from the existing C&D waste recovery facility at Huntstown, would generate an increase in HGV movements on the surrounding local network when compared to existing levels. HGV traffic can be of particular concern to both local residents and highway users, and the mitigation measures outlined below are designed to alleviate any adverse impacts:

- Roadstone Ltd would adhere to a routing policy to ensure all movements are made via the strategic road network to avoid HGV's passing through residential areas as far as is practical.
- Roadstone Ltd would employ a policy of safety and environmental awareness for all HGV drivers accessing the site.
- It may be possible to reduce the number of additional traffic movements generated by the increased activity at the C&D waste recovery facility by encouraging "backloading", whereby trucks delivering aggregates / blocks from the adjoining facility will return with pre-sorted construction and demolition waste for the recovery facility. Recycled secondary aggregates may also be dispatched off-site in place of virgin aggregates from the adjoining quarry.
- Efforts should be made to promote backloading practices as aside from reducing traffic impact, it can offer opportunities to significantly reduce haulage costs, enhance the viability of the recovery operation and contribute to a reduction in traffic related emissions generated by the construction and development sector.

## CONCLUSIONS

13.100 This chapter assesses the traffic and transport implications of the proposed increase in the current rate of waste intake at its licensed construction & demolition recovery facility at Huntstown Quarry from a maximum of 24,950 tonnes per annum at present to a maximum of 95,000 tonnes per annum in future years

13.101 The principal objective of this assessment was to provide a detailed consideration of the proposed development in terms of highways and transportation planning. This includes details of all the traffic and movement activity associated with the proposed development and any resulting traffic and transport related impacts.

13.102 In accordance with the scale of development and location, realistic consideration has been given to the non-car accessibility of the site. This demonstrated that non-car accessibility is adequate for the type of development located in this area.

13.103 The application site is well located in terms of access to the strategic highway network and all HGV traffic would be routed on roads considered suitable to accommodate frequent HGV movement.

13.104 Junction capacity assessment was carried out to determine the impact the additional development trips would have on the existing junctions within the vicinity of the proposed development. The analysis showed that the existing R135 / Elm Road signalised junction and the R135 / N2 Slip Road roundabout junction will operate within capacity when the development is operational in 2017, 2022 and 2032.

13.105 The R135 / N2 Slip Road priority junction and the R135 / L3125 signalised junction at Kilshane Cross are currently operating at capacity. With the development operational in 2017, 2022 and 2032 both junctions will continue to operate at capacity with queues and delays during the AM and PM peak hours. It should be noted the development flows will have an insignificant impact on the operational performance of both junctions as the junctions are currently operating at capacity and will continue to do so with no development in place in 2017, 2022 and 2032 during the AM and PM peak hours.



13.106 Sensitivity testing was undertaken for other committed and other planned development with the proposed development in place in 2022 and 2032. These analyses showed that the existing R135 / Elm Road signalised junction and the R135 / N2 Slip Road roundabout junction will operate within capacity when the developments are operational 2022 and 2032. The R135 / N2 Slip Road priority junction and the R135 / L3125 signalised junction are currently operating at capacity. With all developments operational in 2022 and 2032 both junctions will continue to operate at capacity with queues and delays during the AM and PM peak hours.

13.107 With the future opening of the Western Link Road, traffic flows through the R135 / L3125 signalised junction at Kilshane Cross travelling to and from Dublin Airport will re-distribute onto the Western Link Road. As a result, the R135 / L3125 signalised junction will operate within capacity in 2022 and 2032 during the AM and PM peak hours with the proposed development in place.

13.108 A road capacity assessment of the R135 (North Road) was carried out to determine the impact the additional development flows would have on the R135 Regional Road. The AM and PM peak hour flows were converted to

AADT using the methodology in TII Project Appraisal Guidelines. Table 6/1 of the TII TD 9/12 indicated that the R135 would be considered as a Type 2 Single Carriageway with a capacity of 8,600 AADT for a level of Service D.

13.109 The assessment showed that in 2016 the R135 operates within capacity for a level of service D with an existing AADT level 7,742 vehicles.

13.110 In 2017, 2022 and 2032 with the additional development trips and an increase in the background flows, the R135 will have a proposed AADT of 7,824 in 2017, a proposed AADT of 8,246 in 2022 and a proposed AADT of 8,590 in 2032 which is below the recommended AADT capacity for a Level of Service D for a Type 2 Single Carriageway.

13.111 A review of accident records on the surrounding highway network covering the period from 2006 to 2013 showed that no fatal or serious incidents were recorded at the North Road access to the Huntstown Quarry Complex. The one fatal incident and one serious incident recorded both occurred at Kilshane Cross.

13.112 Three minor incidents occurred in close proximity to the North Road quarry access. However it appears these took place prior to the N2 road realignment and upgrading. None are therefore specifically relevant to the development proposal, both in terms of location and incident detail. It is considered that the proposed development would not have a significant impact on road safety.

13.113 Overall it is considered that the development proposal would have a minimal impact in terms of highway and transportation. For the above reasons the proposed development of the site accords with the national, regional and county planning policies and is considered to be acceptable in traffic and transport terms.

# APPENDICES

# APPENDIX 13-A
# TRAFFIC COUNT DATA

| | |
|---|---|
| **Client:** | Roadplan Consulting |
| **Job No:** | 3082-IRE Huntstown Quarry |
| **Survey Date:** | 22/06/2016 |
| **Survey Method:** | Video Observation |
| **Weather AM:** | Cloudy |
| **Weather PM** | Cloudy |
| **Site No:** | Site 1 |
| **Road:** | N2 / R135 Roundabout |

Entry: Arm A - R135 (N)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - R135 (S) | | | | | | | | Destination: Arm C - N2 On/ Off Slip Road | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | 1 | 0 | 0 | 0 | 1 | 22 | 18 | 8 | 2 | 1 | 0 | 0 | 0 | 29 | 51 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 6 | 3 | 3 | 2 | 0 | 0 | 31 | 15 | 6 | 4 | 1 | 1 | 0 | 0 | 27 | 58 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 10 | 0 | 1 | 2 | 1 | 0 | 38 | 17 | 6 | 6 | 1 | 1 | 0 | 0 | 31 | 69 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 6 | 1 | 1 | 3 | 0 | 2 | 47 | 23 | 3 | 1 | 1 | 0 | 1 | 0 | 29 | 76 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 27 | 5 | 5 | 7 | 1 | 3 | 138 | 73 | 23 | 13 | 4 | 2 | 1 | 0 | 116 | 254 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 8 | 0 | 0 | 2 | 0 | 1 | 48 | 22 | 7 | 2 | 3 | 0 | 0 | 0 | 34 | 82 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 4 | 1 | 0 | 0 | 1 | 0 | 37 | 28 | 8 | 3 | 1 | 3 | 2 | 0 | 45 | 82 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 4 | 1 | 0 | 1 | 0 | 0 | 25 | 20 | 5 | 3 | 1 | 0 | 0 | 0 | 29 | 54 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 1 | 1 | 2 | 0 | 0 | 26 | 23 | 5 | 1 | 1 | 2 | 1 | 0 | 33 | 59 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | 19 | 3 | 1 | 5 | 1 | 1 | 136 | 93 | 25 | 9 | 6 | 5 | 3 | 0 | 141 | 277 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 3 | 1 | 1 | 1 | 0 | 1 | 27 | 20 | 3 | 1 | 0 | 0 | 0 | 0 | 24 | 51 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 4 | 1 | 0 | 2 | 0 | 0 | 32 | 15 | 2 | 0 | 3 | 0 | 0 | 0 | 20 | 52 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 6 | 0 | 0 | 0 | 0 | 0 | 34 | 14 | 4 | 2 | 1 | 0 | 0 | 0 | 21 | 55 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 5 | 0 | 0 | 1 | 0 | 0 | 36 | 11 | 8 | 2 | 3 | 0 | 0 | 0 | 24 | 60 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 18 | 2 | 1 | 4 | 0 | 1 | 129 | 60 | 17 | 5 | 7 | 0 | 0 | 0 | 89 | 218 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 4 | 1 | 1 | 2 | 0 | 1 | 20 | 13 | 10 | 3 | 3 | 0 | 0 | 0 | 29 | 49 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 4 | 1 | 3 | 0 | 0 | 0 | 21 | 13 | 5 | 1 | 0 | 0 | 0 | 0 | 19 | 40 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 5 | 1 | 0 | 1 | 0 | 0 | 29 | 9 | 1 | 1 | 0 | 0 | 2 | 0 | 13 | 42 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 1 | 2 | 1 | 1 | 0 | 16 | 15 | 3 | 2 | 2 | 0 | 0 | 0 | 22 | 38 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 15 | 4 | 6 | 4 | 1 | 1 | 86 | 50 | 19 | 7 | 5 | 0 | 2 | 0 | 83 | 169 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 7 | 0 | 1 | 2 | 0 | 1 | 27 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | 7 | 34 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 3 | 2 | 1 | 0 | 0 | 0 | 23 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 13 | 36 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 2 | 4 | 1 | 1 | 0 | 0 | 30 | 7 | 3 | 3 | 2 | 0 | 0 | 0 | 15 | 45 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 5 | 0 | 1 | 2 | 0 | 0 | 31 | 10 | 2 | 1 | 1 | 0 | 0 | 0 | 14 | 45 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 17 | 6 | 4 | 5 | 0 | 1 | 111 | 31 | 7 | 8 | 3 | 0 | 0 | 0 | 49 | 160 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 5 | 1 | 1 | 0 | 0 | 0 | 19 | 10 | 0 | 3 | 1 | 0 | 0 | 0 | 14 | 33 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 5 | 2 | 0 | 1 | 1 | 1 | 25 | 15 | 3 | 0 | 1 | 0 | 1 | 0 | 20 | 45 |
| 12:30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 19 | 5 | 0 | 1 | 0 | 0 | 0 | 25 | 13 | 6 | 2 | 0 | 0 | 1 | 0 | 22 | 49 |
| 12:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 4 | 2 | 0 | 1 | 0 | 0 | 23 | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 11 | 35 |
| 1 Hr | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 62 | 19 | 5 | 2 | 2 | 1 | 1 | 92 | 47 | 10 | 6 | 2 | 0 | 2 | 0 | 67 | 162 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | 0 | 0 | 2 | 0 | 0 | 22 | 17 | 4 | 1 | 1 | 0 | 0 | 0 | 23 | 45 |
| 13:15 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 29 | 7 | 2 | 1 | 0 | 0 | 0 | 39 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 12 | 54 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 5 | 1 | 1 | 1 | 1 | 1 | 37 | 20 | 3 | 0 | 1 | 0 | 0 | 0 | 24 | 61 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 0 | 2 | 1 | 1 | 0 | 26 | 22 | 2 | 2 | 0 | 0 | 0 | 0 | 26 | 52 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 89 | 21 | 3 | 4 | 4 | 2 | 1 | 124 | 69 | 10 | 4 | 2 | 0 | 0 | 0 | 85 | 212 |
| 14:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 23 | 3 | 1 | 0 | 1 | 0 | 0 | 28 | 19 | 4 | 2 | 1 | 0 | 0 | 0 | 26 | 55 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 9 | 1 | 0 | 1 | 0 | 0 | 30 | 9 | 4 | 4 | 1 | 0 | 0 | 0 | 18 | 48 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 7 | 0 | 0 | 1 | 0 | 0 | 34 | 11 | 5 | 1 | 1 | 0 | 0 | 0 | 18 | 52 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 7 | 0 | 0 | 1 | 1 | 2 | 37 | 16 | 6 | 2 | 0 | 0 | 0 | 0 | 24 | 61 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 94 | 26 | 2 | 0 | 4 | 1 | 2 | 129 | 55 | 19 | 9 | 3 | 0 | 0 | 0 | 86 | 216 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 3 | 0 | 0 | 2 | 0 | 0 | 21 | 23 | 2 | 2 | 0 | 0 | 0 | 0 | 27 | 48 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | 18 | 3 | 3 | 0 | 0 | 0 | 0 | 24 | 45 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | 0 | 2 | 1 | 0 | 0 | 28 | 12 | 5 | 1 | 0 | 0 | 0 | 0 | 18 | 46 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 3 | 1 | 1 | 1 | 0 | 1 | 25 | 11 | 3 | 2 | 1 | 0 | 1 | 0 | 18 | 43 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 13 | 1 | 3 | 4 | 0 | 1 | 95 | 64 | 13 | 8 | 1 | 0 | 1 | 0 | 87 | 182 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 4 | 3 | 0 | 2 | 0 | 0 | 26 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 17 | 43 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 2 | 0 | 0 | 0 | 4 | 0 | 24 | 19 | 5 | 0 | 0 | 1 | 1 | 0 | 26 | 50 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 1 | 0 | 0 | 1 | 0 | 0 | 18 | 16 | 4 | 1 | 0 | 0 | 0 | 0 | 21 | 39 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 3 | 1 | 0 | 1 | 0 | 0 | 33 | 16 | 7 | 0 | 0 | 0 | 0 | 0 | 23 | 56 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | 10 | 4 | 0 | 4 | 4 | 0 | 101 | 63 | 21 | 1 | 0 | 1 | 1 | 0 | 87 | 188 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 4 | 0 | 1 | 1 | 0 | 3 | 32 | 19 | 6 | 1 | 0 | 0 | 0 | 0 | 26 | 58 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 6 | 0 | 1 | 2 | 0 | 1 | 23 | 15 | 1 | 0 | 2 | 0 | 0 | 0 | 18 | 41 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | 1 | 1 | 0 | 1 | 0 | 23 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 19 | 42 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 1 | 0 | 0 | 0 | 1 | 0 | 20 | 13 | 2 | 0 | 1 | 0 | 0 | 0 | 16 | 36 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | 17 | 1 | 3 | 3 | 2 | 4 | 98 | 62 | 12 | 2 | 3 | 0 | 0 | 0 | 79 | 177 |
| 18:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 1 | 1 | 1 | 3 | 0 | 1 | 24 | 21 | 3 | 0 | 0 | 0 | 0 | 0 | 24 | 49 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 19 | 39 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 34 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 0 | 3 | 0 | 0 | 21 | 11 | 3 | 1 | 1 | 0 | 0 | 0 | 16 | 37 |
| 1 Hr | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 70 | 4 | 1 | 1 | 6 | 0 | 1 | 83 | 60 | 11 | 3 | 1 | 0 | 0 | 0 | 75 | 159 |
| 12 Hrs | 2 | 3 | 1 | 0 | 0 | 2 | 0 | 8 | 967 | 206 | 37 | 30 | 52 | 13 | 17 | 1322 | 727 | 187 | 75 | 37 | 8 | 10 | 0 | 1044 | 2374 |
| Check | | | | | | | | 8 | | | | | | | | 1322 | | | | | | | | 1044 | 2374 |
| Total | 2 | 3 | 1 | 0 | 0 | 2 | 0 | 8 | 967 | 206 | 37 | 30 | 52 | 13 | 17 | 1322 | 727 | 187 | 75 | 37 | 8 | 10 | 0 | 1044 | 2374 |
| Check | | | | | | | | 8 | | | | | | | | 1322 | | | | | | | | 1044 | 2374 |

Entry: Arm B - R135 (S)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - R135 (S) | | | | | | | | Destination: Arm C - N2 On/ Off Slip Road | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 6 | 17 |
| 07:15 | 6 | 6 | 0 | 1 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 2 | 3 | 0 | 0 | 0 | 14 | 27 |
| 07:30 | 1 | 3 | 0 | 0 | 3 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 4 | 0 | 3 | 1 | 0 | 0 | 20 | 27 |
| 07:45 | 10 | 4 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 3 | 0 | 7 | 0 | 0 | 0 | 21 | 36 |
| 1 Hr | 26 | 15 | 0 | 2 | 3 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 8 | 4 | 14 | 1 | 0 | 0 | 61 | 107 |
| 08:00 | 7 | 2 | 0 | 1 | 1 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 5 | 0 | 3 | 0 | 0 | 0 | 20 | 32 |
| 08:15 | 5 | 5 | 0 | 0 | 1 | 2 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | 3 | 4 | 0 | 0 | 0 | 27 | 41 |
| 08:30 | 6 | 1 | 3 | 0 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 2 | 1 | 4 | 0 | 1 | 0 | 20 | 31 |
| 08:45 | 7 | 3 | 0 | 1 | 1 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 3 | 1 | 3 | 0 | 0 | 0 | 21 | 34 |
| 1 Hr | 25 | 11 | 3 | 2 | 4 | 2 | 2 | 49 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 52 | 16 | 5 | 14 | 0 | 1 | 0 | 88 | 138 |
| 09:00 | 7 | 2 | 2 | 1 | 2 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 2 | 3 | 6 | 0 | 0 | 0 | 26 | 40 |
| 09:15 | 6 | 5 | 1 | 3 | 1 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 2 | 9 | 0 | 0 | 0 | 22 | 38 |
| 09:30 | 13 | 1 | 2 | 1 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 3 | 1 | 2 | 0 | 0 | 0 | 15 | 32 |
| 09:45 | 5 | 6 | 1 | 1 | 2 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 2 | 3 | 0 | 0 | 0 | 14 | 29 |
| 1 Hr | 31 | 14 | 6 | 6 | 5 | 0 | 0 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 9 | 8 | 20 | 0 | 0 | 0 | 77 | 139 |
| 10:00 | 11 | 6 | 0 | 0 | 1 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 2 | 1 | 3 | 1 | 0 | 0 | 17 | 35 |
| 10:15 | 16 | 3 | 3 | 1 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 6 | 0 | 5 | 1 | 0 | 0 | 21 | 44 |
| 10:30 | 17 | 8 | 1 | 2 | 1 | 0 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 4 | 2 | 5 | 1 | 0 | 0 | 23 | 53 |
| 10:45 | 15 | 2 | 1 | 0 | 1 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 3 | 1 | 2 | 1 | 0 | 0 | 24 | 43 |
| 1 Hr | 59 | 19 | 5 | 3 | 3 | 0 | 0 | 89 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 47 | 15 | 4 | 15 | 4 | 0 | 0 | 85 | 175 |
| 11:00 | 17 | 2 | 1 | 2 | 1 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 1 | 2 | 1 | 0 | 0 | 11 | 34 |
| 11:15 | 17 | 4 | 2 | 2 | 2 | 0 | 2 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 2 | 0 | 3 | 1 | 0 | 0 | 13 | 42 |
| 11:30 | 13 | 6 | 2 | 1 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 3 | 4 | 4 | 1 | 0 | 0 | 21 | 43 |
| 11:45 | 21 | 5 | 1 | 1 | 2 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 3 | 4 | 1 | 1 | 1 | 18 | 48 |
| 1 Hr | 68 | 17 | 6 | 6 | 5 | 0 | 2 | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 9 | 8 | 13 | 4 | 1 | 1 | 63 | 167 |
| 12:00 | 25 | 10 | 2 | 1 | 1 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 2 | 1 | 5 | 0 | 0 | 0 | 15 | 54 |
| 12:15 | 24 | 4 | 0 | 0 | 0 | 1 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 4 | 2 | 3 | 1 | 0 | 0 | 27 | 56 |
| 12:30 | 17 | 5 | 1 | 0 | 2 | 0 | 0 | 25 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 12 | 2 | 2 | 4 | 1 | 0 | 1 | 22 | 49 |
| 12:45 | 20 | 9 | 2 | 2 | 2 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 3 | 2 | 0 | 0 | 0 | 17 | 52 |
| 1 Hr | 86 | 28 | 5 | 3 | 5 | 1 | 0 | 128 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 47 | 9 | 8 | 14 | 2 | 0 | 1 | 81 | 211 |
| 13:00 | 21 | 3 | 1 | 0 | 1 | 0 | 0 | 26 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 4 | 1 | 2 | 1 | 0 | 0 | 25 | 54 |
| 13:15 | 33 | 4 | 0 | 0 | 1 | 0 | 0 | 38 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 15 | 6 | 2 | 4 | 1 | 0 | 0 | 28 | 67 |
| 13:30 | 19 | 1 | 2 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 3 | 3 | 2 | 0 | 0 | 0 | 31 | 53 |
| 13:45 | 22 | 5 | 2 | 1 | 1 | 0 | 0 | 31 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 3 | 3 | 8 | 0 | 0 | 0 | 25 | 57 |
| 1 Hr | 95 | 13 | 5 | 1 | 3 | 0 | 0 | 117 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 66 | 16 | 9 | 16 | 2 | 0 | 0 | 109 | 231 |
| 14:00 | 18 | 2 | 0 | 1 | 2 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | 2 | 5 | 0 | 0 | 0 | 32 | 55 |
| 14:15 | 19 | 7 | 1 | 0 | 1 | 1 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 2 | 2 | 5 | 0 | 0 | 0 | 23 | 52 |
| 14:30 | 22 | 3 | 0 | 1 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 2 | 4 | 0 | 0 | 0 | 17 | 43 |
| 14:45 | 22 | 5 | 1 | 2 | 2 | 1 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 8 | 2 | 4 | 1 | 0 | 0 | 34 | 67 |
| 1 Hr | 81 | 17 | 2 | 4 | 5 | 2 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 17 | 8 | 18 | 1 | 0 | 0 | 106 | 217 |
| 15:00 | 21 | 7 | 0 | 2 | 1 | 0 | 0 | 31 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 10 | 5 | 4 | 5 | 0 | 0 | 0 | 24 | 56 |
| 15:15 | 21 | 6 | 0 | 0 | 1 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 2 | 0 | 2 | 0 | 0 | 0 | 24 | 52 |
| 15:30 | 35 | 0 | 2 | 1 | 0 | 0 | 0 | 38 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 3 | 0 | 7 | 2 | 0 | 0 | 27 | 67 |
| 15:45 | 21 | 5 | 1 | 1 | 2 | 0 | 4 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 7 | 1 | 7 | 2 | 0 | 0 | 34 | 68 |
| 1 Hr | 98 | 18 | 3 | 4 | 4 | 0 | 4 | 131 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 62 | 17 | 5 | 21 | 4 | 0 | 0 | 109 | 243 |
| 16:00 | 22 | 3 | 3 | 2 | 1 | 1 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 9 | 1 | 5 | 0 | 0 | 0 | 34 | 66 |
| 16:15 | 29 | 9 | 2 | 1 | 1 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 7 | 2 | 7 | 0 | 0 | 0 | 43 | 85 |
| 16:30 | 21 | 4 | 1 | 3 | 0 | 1 | 0 | 30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 18 | 8 | 3 | 4 | 1 | 0 | 0 | 34 | 65 |
| 16:45 | 29 | 8 | 1 | 2 | 1 | 0 | 1 | 42 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 36 | 8 | 1 | 3 | 0 | 0 | 0 | 48 | 91 |
| 1 Hr | 101 | 24 | 7 | 8 | 3 | 2 | 1 | 146 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 100 | 32 | 7 | 19 | 1 | 0 | 0 | 159 | 307 |
| 17:00 | 29 | 10 | 4 | 0 | 2 | 2 | 2 | 49 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 30 | 8 | 2 | 3 | 0 | 0 | 1 | 44 | 94 |
| 17:15 | 34 | 5 | 1 | 3 | 0 | 0 | 1 | 44 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 17 | 5 | 3 | 3 | 0 | 1 | 0 | 29 | 74 |
| 17:30 | 39 | 7 | 1 | 0 | 1 | 0 | 2 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 10 | 0 | 1 | 0 | 0 | 0 | 54 | 104 |
| 17:45 | 27 | 3 | 2 | 1 | 2 | 1 | 4 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 5 | 0 | 0 | 0 | 0 | 0 | 56 | 96 |
| 1 Hr | 129 | 25 | 8 | 4 | 5 | 3 | 9 | 183 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 141 | 28 | 5 | 7 | 0 | 1 | 1 | 183 | 368 |
| 18:00 | 40 | 6 | 3 | 0 | 3 | 1 | 2 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 4 | 1 | 3 | 0 | 0 | 1 | 49 | 104 |
| 18:15 | 30 | 1 | 0 | 0 | 2 | 3 | 0 | 36 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 43 | 9 | 1 | 2 | 0 | 0 | 0 | 55 | 92 |
| 18:30 | 19 | 5 | 0 | 0 | 0 | 0 | 0 | 24 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 33 | 4 | 1 | 1 | 0 | 0 | 0 | 39 | 65 |
| 18:45 | 18 | 6 | 0 | 0 | 2 | 2 | 1 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 3 | 2 | 2 | 1 | 0 | 0 | 30 | 59 |
| 1 Hr | 107 | 18 | 3 | 0 | 7 | 6 | 3 | 144 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 138 | 20 | 5 | 8 | 1 | 0 | 1 | 173 | 320 |
| 12 Hrs | 906 | 219 | 53 | 43 | 52 | 16 | 21 | 1310 | 6 | 7 | 1 | 5 | 0 | 0 | 0 | 19 | 816 | 196 | 76 | 179 | 20 | 3 | 4 | 1294 | 2623 |
| Check | | | | | | | | 1310 | | | | | | | | 19 | | | | | | | | 1294 | 2623 |
| Total | 906 | 219 | 53 | 43 | 52 | 16 | 21 | 1310 | 6 | 7 | 1 | 5 | 0 | 0 | 0 | 19 | 816 | 196 | 76 | 179 | 20 | 3 | 4 | 1294 | 2623 |
| Check | | | | | | | | 1310 | | | | | | | | 19 | | | | | | | | 1294 | 2623 |

Entry: Arm C - N2 On/ Off Slip Road

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - R135 (S) | | | | | | | | Destination: Arm C - N2 On/ Off Slip Road | | | | | | | | Arm Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | |
| 07:00 | 3 | 2 | 3 | 2 | 0 | 0 | 0 | 10 | 23 | 6 | 2 | 1 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 07:15 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 7 | 25 | 5 | 0 | 2 | 1 | 0 | 1 | 34 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 42 |
| 07:30 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 12 | 39 | 9 | 1 | 5 | 2 | 1 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 07:45 | 9 | 6 | 1 | 0 | 0 | 0 | 0 | 16 | 30 | 13 | 0 | 2 | 0 | 0 | 0 | 45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 62 |
| 1 Hr | 22 | 16 | 5 | 2 | 0 | 0 | 0 | 45 | 117 | 33 | 3 | 10 | 3 | 1 | 1 | 168 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 215 |
| 08:00 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 14 | 27 | 8 | 2 | 2 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 08:15 | 16 | 4 | 0 | 0 | 0 | 1 | 0 | 21 | 34 | 6 | 1 | 4 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 08:30 | 19 | 6 | 0 | 1 | 0 | 0 | 0 | 26 | 37 | 7 | 1 | 3 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 08:45 | 13 | 4 | 1 | 1 | 0 | 0 | 0 | 19 | 34 | 6 | 2 | 3 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 1 Hr | 58 | 18 | 1 | 2 | 0 | 1 | 0 | 80 | 132 | 27 | 6 | 12 | 0 | 0 | 0 | 177 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 257 |
| 09:00 | 11 | 4 | 3 | 1 | 0 | 0 | 0 | 19 | 25 | 8 | 2 | 3 | 3 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 09:15 | 13 | 3 | 1 | 1 | 0 | 0 | 0 | 18 | 19 | 5 | 1 | 6 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 09:30 | 16 | 3 | 2 | 2 | 0 | 0 | 0 | 23 | 11 | 4 | 0 | 6 | 1 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 09:45 | 16 | 6 | 0 | 0 | 0 | 0 | 0 | 22 | 15 | 3 | 0 | 0 | 1 | 0 | 0 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 42 |
| 1 Hr | 56 | 16 | 6 | 4 | 0 | 0 | 0 | 82 | 70 | 20 | 3 | 15 | 5 | 0 | 0 | 113 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 196 |
| 10:00 | 11 | 6 | 3 | 1 | 0 | 0 | 1 | 22 | 10 | 4 | 1 | 4 | 0 | 0 | 0 | 19 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 44 |
| 10:15 | 9 | 3 | 2 | 1 | 0 | 0 | 0 | 15 | 17 | 1 | 2 | 1 | 0 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 37 |
| 10:30 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 12 | 4 | 1 | 3 | 1 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 33 |
| 10:45 | 10 | 3 | 4 | 0 | 0 | 0 | 0 | 17 | 14 | 2 | 0 | 6 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 1 Hr | 39 | 14 | 9 | 2 | 0 | 0 | 1 | 65 | 53 | 11 | 4 | 14 | 1 | 0 | 0 | 83 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 153 |
| 11:00 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 11 | 10 | 4 | 2 | 2 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 11:15 | 12 | 5 | 2 | 2 | 0 | 2 | 0 | 23 | 14 | 3 | 1 | 0 | 0 | 0 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 42 |
| 11:30 | 14 | 3 | 1 | 0 | 0 | 1 | 0 | 19 | 11 | 5 | 1 | 2 | 1 | 0 | 0 | 20 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 41 |
| 11:45 | 16 | 2 | 2 | 1 | 0 | 0 | 0 | 21 | 11 | 5 | 0 | 4 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 1 Hr | 50 | 12 | 6 | 3 | 0 | 3 | 0 | 74 | 46 | 17 | 4 | 8 | 1 | 0 | 0 | 76 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 153 |
| 12:00 | 12 | 3 | 1 | 1 | 0 | 1 | 0 | 18 | 12 | 3 | 0 | 1 | 0 | 0 | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 37 |
| 12:15 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 13 | 18 | 3 | 1 | 2 | 1 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 12:30 | 17 | 4 | 4 | 2 | 0 | 1 | 0 | 28 | 19 | 3 | 1 | 0 | 1 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 12:45 | 14 | 5 | 4 | 0 | 0 | 0 | 0 | 23 | 14 | 2 | 0 | 6 | 3 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 1 Hr | 52 | 14 | 10 | 4 | 0 | 2 | 0 | 82 | 63 | 11 | 2 | 9 | 5 | 0 | 0 | 90 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 175 |
| 13:00 | 15 | 3 | 3 | 0 | 0 | 0 | 0 | 21 | 17 | 3 | 1 | 2 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 13:15 | 16 | 4 | 3 | 0 | 0 | 0 | 0 | 23 | 19 | 3 | 2 | 1 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 13:30 | 27 | 5 | 2 | 0 | 0 | 0 | 0 | 34 | 25 | 3 | 1 | 1 | 0 | 0 | 0 | 30 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 66 |
| 13:45 | 17 | 5 | 1 | 1 | 0 | 0 | 0 | 24 | 18 | 4 | 0 | 2 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 1 Hr | 75 | 17 | 9 | 1 | 0 | 0 | 0 | 102 | 79 | 13 | 4 | 6 | 0 | 0 | 0 | 102 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 206 |
| 14:00 | 15 | 5 | 0 | 1 | 1 | 0 | 0 | 22 | 10 | 2 | 2 | 4 | 1 | 0 | 1 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 14:15 | 16 | 5 | 2 | 2 | 0 | 0 | 0 | 25 | 15 | 1 | 2 | 5 | 1 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 14:30 | 11 | 4 | 2 | 0 | 0 | 0 | 0 | 17 | 18 | 6 | 3 | 2 | 1 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 14:45 | 11 | 2 | 3 | 0 | 0 | 0 | 0 | 16 | 12 | 4 | 2 | 5 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 1 Hr | 53 | 16 | 7 | 3 | 1 | 0 | 0 | 80 | 55 | 13 | 9 | 16 | 3 | 0 | 1 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 |
| 15:00 | 20 | 4 | 2 | 0 | 1 | 0 | 0 | 27 | 13 | 3 | 0 | 4 | 1 | 0 | 0 | 21 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 49 |
| 15:15 | 21 | 4 | 2 | 0 | 0 | 0 | 0 | 27 | 15 | 5 | 1 | 3 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 15:30 | 11 | 1 | 2 | 2 | 0 | 0 | 0 | 16 | 22 | 3 | 2 | 3 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 15:45 | 13 | 6 | 0 | 3 | 0 | 0 | 0 | 22 | 13 | 3 | 3 | 5 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 1 Hr | 65 | 15 | 6 | 5 | 1 | 0 | 0 | 92 | 63 | 14 | 6 | 15 | 1 | 0 | 0 | 99 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 192 |
| 16:00 | 17 | 9 | 3 | 1 | 0 | 0 | 1 | 31 | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 47 |
| 16:15 | 19 | 7 | 2 | 3 | 0 | 0 | 0 | 31 | 10 | 3 | 2 | 7 | 1 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 16:30 | 30 | 7 | 0 | 1 | 1 | 0 | 0 | 39 | 29 | 7 | 1 | 1 | 0 | 0 | 0 | 38 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 78 |
| 16:45 | 18 | 7 | 2 | 2 | 0 | 0 | 0 | 29 | 23 | 3 | 1 | 3 | 1 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 1 Hr | 84 | 30 | 7 | 7 | 1 | 0 | 1 | 130 | 74 | 15 | 4 | 12 | 2 | 0 | 0 | 107 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 239 |
| 17:00 | 26 | 5 | 3 | 0 | 0 | 1 | 0 | 35 | 30 | 5 | 0 | 2 | 0 | 0 | 0 | 37 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 73 |
| 17:15 | 18 | 8 | 2 | 0 | 0 | 0 | 0 | 28 | 35 | 4 | 2 | 1 | 0 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 17:30 | 27 | 5 | 1 | 1 | 0 | 1 | 0 | 35 | 44 | 0 | 1 | 5 | 0 | 0 | 0 | 50 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 86 |
| 17:45 | 26 | 3 | 2 | 1 | 1 | 0 | 0 | 33 | 22 | 3 | 2 | 2 | 0 | 0 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 63 |
| 1 Hr | 97 | 21 | 8 | 2 | 1 | 2 | 0 | 131 | 131 | 12 | 5 | 10 | 0 | 0 | 0 | 158 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 292 |
| 18:00 | 26 | 3 | 3 | 1 | 0 | 1 | 0 | 34 | 20 | 4 | 2 | 4 | 0 | 1 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 18:15 | 22 | 4 | 1 | 3 | 0 | 1 | 0 | 31 | 11 | 3 | 0 | 2 | 0 | 1 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 18:30 | 25 | 2 | 1 | 0 | 0 | 2 | 0 | 30 | 17 | 2 | 0 | 4 | 1 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 18:45 | 22 | 3 | 1 | 1 | 0 | 0 | 0 | 27 | 9 | 0 | 0 | 2 | 1 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 1 Hr | 95 | 12 | 6 | 5 | 0 | 4 | 0 | 122 | 57 | 9 | 2 | 12 | 2 | 2 | 1 | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 207 |
| 12 Hrs | 746 | 201 | 80 | 40 | 4 | 12 | 2 | 1085 | 940 | 195 | 52 | 139 | 23 | 3 | 3 | 1355 | 14 | 5 | 2 | 1 | 0 | 0 | 0 | 22 | 2462 |
| Check | | | | | | | | 1085 | | | | | | | | 1355 | | | | | | | | 22 | 2462 |
| Total | 746 | 201 | 80 | 40 | 4 | 12 | 2 | 1085 | 940 | 195 | 52 | 139 | 23 | 3 | 3 | 1355 | 14 | 5 | 2 | 1 | 0 | 0 | 0 | 22 | 2462 |
| Check | | | | | | | | 1085 | | | | | | | | 1355 | | | | | | | | 22 | 2462 |

ORIGIN SUMMARY

| | Origin: Arm A - R135 (N) | | | | | | | | Origin: Arm B - R135 (S) | | | | | | | | Origin: Arm C - N2 On/ Off Slip Road | | | | | | | | Origin Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | |
| 07:00 | 33 | 13 | 3 | 1 | 0 | 0 | 1 | 51 | 12 | 2 | 2 | 1 | 0 | 0 | 0 | 17 | 26 | 8 | 5 | 3 | 0 | 0 | 0 | 42 | 110 |
| 07:15 | 32 | 12 | 7 | 4 | 3 | 0 | 0 | 58 | 14 | 7 | 2 | 4 | 0 | 0 | 0 | 27 | 27 | 10 | 1 | 2 | 1 | 0 | 1 | 42 | 127 |
| 07:30 | 41 | 16 | 6 | 2 | 3 | 1 | 0 | 69 | 13 | 7 | 0 | 3 | 4 | 0 | 0 | 27 | 47 | 13 | 1 | 5 | 2 | 1 | 0 | 69 | 165 |
| 07:45 | 57 | 9 | 2 | 2 | 3 | 1 | 2 | 76 | 21 | 7 | 0 | 8 | 0 | 0 | 0 | 36 | 39 | 20 | 1 | 2 | 0 | 0 | 0 | 62 | 174 |
| 1 Hr | 163 | 50 | 18 | 9 | 9 | 2 | 3 | 254 | 60 | 23 | 4 | 16 | 4 | 0 | 0 | 107 | 139 | 51 | 8 | 12 | 3 | 1 | 1 | 215 | 576 |
| 08:00 | 59 | 15 | 2 | 3 | 2 | 0 | 1 | 82 | 19 | 7 | 0 | 4 | 1 | 0 | 1 | 32 | 37 | 12 | 2 | 2 | 0 | 0 | 0 | 53 | 167 |
| 08:15 | 59 | 12 | 4 | 1 | 3 | 3 | 0 | 82 | 19 | 11 | 3 | 4 | 1 | 2 | 1 | 41 | 50 | 10 | 1 | 4 | 0 | 1 | 0 | 66 | 189 |
| 08:30 | 39 | 9 | 4 | 1 | 1 | 0 | 0 | 54 | 18 | 3 | 4 | 4 | 1 | 1 | 0 | 31 | 56 | 13 | 1 | 4 | 0 | 0 | 0 | 74 | 159 |
| 08:45 | 42 | 8 | 2 | 2 | 4 | 1 | 0 | 59 | 21 | 7 | 1 | 4 | 1 | 0 | 0 | 34 | 47 | 10 | 3 | 4 | 0 | 0 | 0 | 64 | 157 |
| 1 Hr | 199 | 44 | 12 | 7 | 10 | 4 | 1 | 277 | 77 | 28 | 8 | 16 | 4 | 3 | 2 | 138 | 190 | 45 | 7 | 14 | 0 | 1 | 0 | 257 | 672 |
| 09:00 | 40 | 6 | 2 | 1 | 1 | 0 | 1 | 51 | 22 | 4 | 5 | 7 | 2 | 0 | 0 | 40 | 36 | 12 | 5 | 4 | 3 | 0 | 0 | 60 | 151 |
| 09:15 | 40 | 6 | 1 | 3 | 2 | 0 | 0 | 52 | 16 | 6 | 3 | 12 | 1 | 0 | 0 | 38 | 32 | 8 | 2 | 7 | 0 | 0 | 0 | 49 | 139 |
| 09:30 | 42 | 10 | 2 | 1 | 0 | 0 | 0 | 55 | 22 | 4 | 3 | 3 | 0 | 0 | 0 | 32 | 27 | 7 | 2 | 8 | 1 | 0 | 0 | 45 | 132 |
| 09:45 | 41 | 13 | 2 | 3 | 1 | 0 | 0 | 60 | 11 | 9 | 3 | 4 | 2 | 0 | 0 | 29 | 31 | 9 | 1 | 0 | 1 | 0 | 0 | 42 | 131 |
| 1 Hr | 163 | 35 | 7 | 8 | 4 | 0 | 1 | 218 | 71 | 23 | 14 | 26 | 5 | 0 | 0 | 139 | 126 | 36 | 10 | 19 | 5 | 0 | 0 | 196 | 553 |
| 10:00 | 24 | 14 | 4 | 4 | 2 | 0 | 1 | 49 | 21 | 8 | 1 | 3 | 2 | 0 | 0 | 35 | 22 | 12 | 4 | 5 | 0 | 0 | 1 | 44 | 128 |
| 10:15 | 26 | 9 | 2 | 3 | 0 | 0 | 0 | 40 | 25 | 9 | 3 | 6 | 1 | 0 | 0 | 44 | 27 | 4 | 4 | 2 | 0 | 0 | 0 | 37 | 121 |
| 10:30 | 31 | 6 | 2 | 0 | 1 | 2 | 0 | 42 | 29 | 12 | 3 | 7 | 2 | 0 | 0 | 53 | 22 | 6 | 1 | 3 | 1 | 0 | 0 | 33 | 128 |
| 10:45 | 24 | 5 | 3 | 4 | 1 | 1 | 0 | 38 | 32 | 5 | 2 | 2 | 2 | 0 | 0 | 43 | 24 | 5 | 4 | 6 | 0 | 0 | 0 | 39 | 120 |
| 1 Hr | 105 | 34 | 11 | 11 | 4 | 3 | 1 | 169 | 107 | 34 | 9 | 18 | 7 | 0 | 0 | 175 | 95 | 27 | 13 | 16 | 1 | 0 | 1 | 153 | 497 |
| 11:00 | 19 | 8 | 3 | 1 | 2 | 0 | 1 | 34 | 22 | 4 | 2 | 4 | 2 | 0 | 0 | 34 | 18 | 6 | 3 | 2 | 0 | 0 | 0 | 29 | 97 |
| 11:15 | 28 | 4 | 3 | 1 | 0 | 0 | 0 | 36 | 24 | 6 | 2 | 5 | 3 | 0 | 2 | 42 | 27 | 8 | 3 | 2 | 0 | 2 | 0 | 42 | 120 |
| 11:30 | 29 | 5 | 7 | 3 | 1 | 0 | 0 | 45 | 22 | 9 | 6 | 5 | 1 | 0 | 0 | 43 | 26 | 8 | 2 | 3 | 1 | 1 | 0 | 41 | 129 |
| 11:45 | 33 | 7 | 1 | 2 | 2 | 0 | 0 | 45 | 27 | 7 | 4 | 5 | 3 | 1 | 1 | 48 | 27 | 7 | 2 | 5 | 0 | 0 | 0 | 41 | 134 |
| 1 Hr | 109 | 24 | 14 | 7 | 5 | 0 | 1 | 160 | 95 | 26 | 14 | 19 | 9 | 1 | 3 | 167 | 98 | 29 | 10 | 12 | 1 | 3 | 0 | 153 | 480 |
| 12:00 | 22 | 5 | 4 | 2 | 0 | 0 | 0 | 33 | 32 | 12 | 3 | 6 | 1 | 0 | 0 | 54 | 27 | 6 | 1 | 2 | 0 | 1 | 0 | 37 | 124 |
| 12:15 | 30 | 8 | 2 | 1 | 1 | 2 | 1 | 45 | 41 | 8 | 2 | 3 | 1 | 1 | 0 | 56 | 27 | 5 | 2 | 3 | 1 | 0 | 0 | 38 | 139 |
| 12:30 | 32 | 12 | 3 | 1 | 0 | 1 | 0 | 49 | 29 | 8 | 4 | 4 | 3 | 0 | 1 | 49 | 36 | 7 | 5 | 2 | 1 | 1 | 0 | 52 | 150 |
| 12:45 | 25 | 6 | 3 | 0 | 1 | 0 | 0 | 35 | 31 | 10 | 5 | 4 | 2 | 0 | 0 | 52 | 28 | 7 | 4 | 6 | 3 | 0 | 0 | 48 | 135 |
| 1 Hr | 109 | 31 | 12 | 4 | 2 | 3 | 1 | 162 | 133 | 38 | 14 | 17 | 7 | 1 | 1 | 211 | 118 | 25 | 12 | 13 | 5 | 2 | 0 | 175 | 548 |
| 13:00 | 31 | 10 | 1 | 1 | 2 | 0 | 0 | 45 | 41 | 7 | 2 | 2 | 2 | 0 | 0 | 54 | 32 | 6 | 4 | 2 | 0 | 0 | 0 | 44 | 143 |
| 13:15 | 40 | 8 | 3 | 1 | 0 | 2 | 0 | 54 | 48 | 10 | 2 | 5 | 2 | 0 | 0 | 67 | 35 | 7 | 5 | 1 | 0 | 0 | 0 | 48 | 169 |
| 13:30 | 47 | 8 | 1 | 2 | 1 | 1 | 1 | 61 | 42 | 4 | 5 | 2 | 0 | 0 | 0 | 53 | 54 | 8 | 3 | 1 | 0 | 0 | 0 | 66 | 180 |
| 13:45 | 41 | 5 | 2 | 2 | 1 | 1 | 0 | 52 | 33 | 9 | 5 | 9 | 1 | 0 | 0 | 57 | 35 | 9 | 1 | 3 | 0 | 0 | 0 | 48 | 157 |
| 1 Hr | 159 | 31 | 7 | 6 | 4 | 4 | 1 | 212 | 164 | 30 | 14 | 18 | 5 | 0 | 0 | 231 | 156 | 30 | 13 | 7 | 0 | 0 | 0 | 206 | 649 |
| 14:00 | 43 | 7 | 3 | 1 | 1 | 0 | 0 | 55 | 37 | 8 | 2 | 6 | 2 | 0 | 0 | 55 | 25 | 7 | 2 | 5 | 2 | 0 | 1 | 42 | 152 |
| 14:15 | 28 | 13 | 5 | 1 | 1 | 0 | 0 | 48 | 33 | 9 | 3 | 5 | 1 | 1 | 0 | 52 | 31 | 6 | 4 | 7 | 1 | 0 | 0 | 49 | 149 |
| 14:30 | 37 | 12 | 1 | 1 | 1 | 0 | 0 | 52 | 32 | 4 | 2 | 5 | 0 | 0 | 0 | 43 | 29 | 10 | 5 | 2 | 1 | 0 | 0 | 47 | 142 |
| 14:45 | 42 | 13 | 2 | 0 | 1 | 1 | 2 | 61 | 41 | 13 | 3 | 6 | 3 | 1 | 0 | 67 | 23 | 6 | 5 | 5 | 0 | 0 | 0 | 39 | 167 |
| 1 Hr | 150 | 45 | 11 | 3 | 4 | 1 | 2 | 216 | 143 | 34 | 10 | 22 | 6 | 2 | 0 | 217 | 108 | 29 | 16 | 19 | 4 | 0 | 1 | 177 | 610 |
| 15:00 | 39 | 5 | 2 | 0 | 2 | 0 | 0 | 48 | 31 | 12 | 4 | 8 | 1 | 0 | 0 | 56 | 33 | 8 | 2 | 4 | 2 | 0 | 0 | 49 | 153 |
| 15:15 | 38 | 4 | 3 | 0 | 0 | 0 | 0 | 45 | 41 | 8 | 0 | 2 | 1 | 0 | 0 | 52 | 36 | 9 | 3 | 3 | 0 | 0 | 0 | 51 | 148 |
| 15:30 | 31 | 11 | 1 | 2 | 1 | 0 | 0 | 46 | 51 | 4 | 2 | 8 | 2 | 0 | 0 | 67 | 33 | 4 | 4 | 5 | 0 | 0 | 0 | 46 | 159 |
| 15:45 | 29 | 6 | 3 | 2 | 1 | 1 | 1 | 43 | 38 | 12 | 2 | 8 | 4 | 0 | 4 | 68 | 26 | 9 | 3 | 8 | 0 | 0 | 0 | 46 | 157 |
| 1 Hr | 137 | 26 | 9 | 4 | 4 | 1 | 1 | 182 | 161 | 36 | 8 | 26 | 8 | 0 | 4 | 243 | 128 | 30 | 12 | 20 | 2 | 0 | 0 | 192 | 617 |
| 16:00 | 29 | 9 | 3 | 0 | 2 | 0 | 0 | 43 | 41 | 12 | 4 | 7 | 1 | 1 | 0 | 66 | 30 | 11 | 3 | 2 | 0 | 0 | 1 | 47 | 156 |
| 16:15 | 37 | 7 | 0 | 0 | 1 | 5 | 0 | 50 | 56 | 16 | 4 | 8 | 1 | 0 | 0 | 85 | 29 | 10 | 4 | 10 | 1 | 0 | 0 | 54 | 189 |
| 16:30 | 32 | 5 | 1 | 0 | 1 | 0 | 0 | 39 | 39 | 12 | 4 | 8 | 1 | 1 | 0 | 65 | 60 | 14 | 1 | 2 | 1 | 0 | 0 | 78 | 182 |
| 16:45 | 44 | 10 | 1 | 0 | 1 | 0 | 0 | 56 | 65 | 16 | 2 | 6 | 1 | 0 | 1 | 91 | 41 | 10 | 3 | 5 | 1 | 0 | 0 | 60 | 207 |
| 1 Hr | 142 | 31 | 5 | 0 | 5 | 5 | 0 | 188 | 201 | 56 | 14 | 29 | 4 | 2 | 1 | 307 | 160 | 45 | 11 | 19 | 3 | 0 | 1 | 239 | 734 |
| 17:00 | 42 | 10 | 1 | 1 | 1 | 0 | 3 | 58 | 59 | 19 | 6 | 3 | 2 | 2 | 3 | 94 | 56 | 10 | 4 | 2 | 0 | 1 | 0 | 73 | 225 |
| 17:15 | 28 | 7 | 0 | 3 | 2 | 0 | 1 | 41 | 51 | 10 | 4 | 7 | 0 | 1 | 1 | 74 | 53 | 12 | 4 | 1 | 0 | 0 | 0 | 70 | 185 |
| 17:30 | 29 | 9 | 2 | 1 | 0 | 1 | 0 | 42 | 82 | 17 | 1 | 1 | 1 | 0 | 2 | 104 | 72 | 5 | 2 | 6 | 0 | 1 | 0 | 86 | 232 |
| 17:45 | 31 | 3 | 0 | 1 | 0 | 1 | 0 | 36 | 78 | 8 | 2 | 1 | 2 | 1 | 4 | 96 | 49 | 6 | 4 | 3 | 1 | 0 | 0 | 63 | 195 |
| 1 Hr | 130 | 29 | 3 | 6 | 3 | 2 | 4 | 177 | 270 | 54 | 13 | 12 | 5 | 4 | 10 | 368 | 230 | 33 | 14 | 12 | 1 | 2 | 0 | 292 | 837 |
| 18:00 | 38 | 5 | 1 | 1 | 3 | 0 | 1 | 49 | 80 | 10 | 4 | 3 | 3 | 1 | 3 | 104 | 46 | 7 | 5 | 5 | 0 | 2 | 0 | 65 | 218 |
| 18:15 | 33 | 4 | 2 | 0 | 0 | 0 | 0 | 39 | 73 | 11 | 1 | 2 | 2 | 3 | 0 | 92 | 33 | 7 | 1 | 5 | 0 | 2 | 1 | 49 | 180 |
| 18:30 | 31 | 3 | 0 | 0 | 0 | 0 | 0 | 34 | 53 | 10 | 1 | 1 | 0 | 0 | 0 | 65 | 42 | 4 | 1 | 4 | 1 | 2 | 0 | 54 | 153 |
| 18:45 | 28 | 4 | 1 | 1 | 3 | 0 | 0 | 37 | 40 | 9 | 2 | 2 | 3 | 2 | 1 | 59 | 31 | 3 | 1 | 3 | 1 | 0 | 0 | 39 | 135 |
| 1 Hr | 130 | 16 | 4 | 2 | 6 | 0 | 1 | 159 | 246 | 40 | 8 | 8 | 8 | 6 | 4 | 320 | 152 | 21 | 8 | 17 | 2 | 6 | 1 | 207 | 686 |
| 12 Hrs | 1696 | 396 | 113 | 67 | 60 | 25 | 17 | 2374 | 1728 | 422 | 130 | 227 | 72 | 19 | 25 | 2623 | 1700 | 401 | 134 | 180 | 27 | 15 | 5 | 2462 | 7459 |
| Check | | | | | | | | 2374 | | | | | | | | 2623 | | | | | | | | 2462 | 7459 |
| Total | 1696 | 396 | 113 | 67 | 60 | 25 | 17 | 2374 | 1728 | 422 | 130 | 227 | 72 | 19 | 25 | 2623 | 1700 | 401 | 134 | 180 | 27 | 15 | 5 | 2462 | 7459 |
| Check | | | | | | | | 2374 | | | | | | | | 2623 | | | | | | | | 2462 | 7459 |

DESTINATION SUMMARY

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - R135 (S) | | | | | | | | Destination: Arm C - N2 On/ Off Slip Road | | | | | | | | Dest |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 12 | 4 | 3 | 2 | 0 | 0 | 0 | 21 | 38 | 11 | 3 | 1 | 0 | 0 | 1 | 54 | 21 | 8 | 4 | 2 | 0 | 0 | 0 | 35 | 110 |
| 07:15 | 8 | 10 | 1 | 1 | 0 | 0 | 0 | 20 | 42 | 11 | 3 | 5 | 3 | 0 | 1 | 65 | 23 | 8 | 6 | 4 | 1 | 0 | 0 | 42 | 127 |
| 07:30 | 9 | 7 | 0 | 0 | 3 | 0 | 0 | 19 | 63 | 19 | 1 | 6 | 4 | 2 | 0 | 95 | 29 | 10 | 6 | 4 | 2 | 0 | 0 | 51 | 165 |
| 07:45 | 19 | 10 | 1 | 1 | 0 | 0 | 0 | 31 | 64 | 19 | 1 | 3 | 3 | 0 | 2 | 92 | 34 | 7 | 1 | 8 | 0 | 1 | 0 | 51 | 174 |
| 1 Hr | 48 | 31 | 5 | 4 | 3 | 0 | 0 | 91 | 207 | 60 | 8 | 15 | 10 | 2 | 4 | 306 | 107 | 33 | 17 | 18 | 3 | 1 | 0 | 179 | 576 |
| 08:00 | 17 | 6 | 0 | 1 | 1 | 0 | 1 | 26 | 64 | 16 | 2 | 2 | 2 | 0 | 1 | 87 | 34 | 12 | 2 | 6 | 0 | 0 | 0 | 54 | 167 |
| 08:15 | 21 | 9 | 0 | 0 | 1 | 3 | 1 | 35 | 65 | 10 | 2 | 4 | 0 | 1 | 0 | 82 | 42 | 14 | 6 | 5 | 3 | 2 | 0 | 72 | 189 |
| 08:30 | 25 | 7 | 3 | 1 | 1 | 0 | 0 | 37 | 56 | 11 | 2 | 3 | 1 | 0 | 0 | 73 | 32 | 7 | 4 | 5 | 0 | 1 | 0 | 49 | 159 |
| 08:45 | 20 | 7 | 1 | 2 | 1 | 0 | 0 | 31 | 53 | 10 | 3 | 4 | 2 | 0 | 0 | 72 | 37 | 8 | 2 | 4 | 2 | 1 | 0 | 54 | 157 |
| 1 Hr | 83 | 29 | 4 | 4 | 4 | 3 | 2 | 129 | 238 | 47 | 9 | 13 | 5 | 1 | 1 | 314 | 145 | 41 | 14 | 20 | 5 | 4 | 0 | 229 | 672 |
| 09:00 | 18 | 6 | 5 | 2 | 2 | 0 | 0 | 33 | 45 | 11 | 3 | 4 | 4 | 0 | 1 | 68 | 35 | 5 | 4 | 6 | 0 | 0 | 0 | 50 | 151 |
| 09:15 | 19 | 8 | 2 | 4 | 1 | 0 | 0 | 34 | 44 | 9 | 2 | 6 | 2 | 0 | 0 | 63 | 25 | 3 | 2 | 12 | 0 | 0 | 0 | 42 | 139 |
| 09:30 | 29 | 4 | 4 | 3 | 0 | 0 | 0 | 40 | 39 | 10 | 0 | 6 | 1 | 0 | 0 | 56 | 23 | 7 | 3 | 3 | 0 | 0 | 0 | 36 | 132 |
| 09:45 | 21 | 12 | 1 | 1 | 2 | 0 | 0 | 37 | 45 | 8 | 0 | 0 | 2 | 0 | 0 | 55 | 17 | 11 | 5 | 6 | 0 | 0 | 0 | 39 | 131 |
| 1 Hr | 87 | 30 | 12 | 10 | 5 | 0 | 0 | 144 | 173 | 38 | 5 | 16 | 9 | 0 | 1 | 242 | 100 | 26 | 14 | 27 | 0 | 0 | 0 | 167 | 553 |
| 10:00 | 22 | 12 | 3 | 1 | 1 | 0 | 1 | 40 | 21 | 8 | 2 | 5 | 2 | 0 | 1 | 39 | 24 | 14 | 4 | 6 | 1 | 0 | 0 | 49 | 128 |
| 10:15 | 25 | 6 | 5 | 2 | 0 | 0 | 0 | 38 | 30 | 5 | 3 | 4 | 0 | 0 | 0 | 42 | 23 | 11 | 1 | 5 | 1 | 0 | 0 | 41 | 121 |
| 10:30 | 26 | 10 | 1 | 2 | 1 | 0 | 0 | 40 | 35 | 9 | 2 | 3 | 2 | 0 | 0 | 51 | 21 | 5 | 3 | 5 | 1 | 2 | 0 | 37 | 128 |
| 10:45 | 25 | 5 | 5 | 0 | 1 | 0 | 0 | 36 | 23 | 4 | 1 | 8 | 1 | 1 | 0 | 38 | 32 | 6 | 3 | 4 | 1 | 0 | 0 | 46 | 120 |
| 1 Hr | 98 | 33 | 14 | 5 | 3 | 0 | 1 | 154 | 109 | 26 | 8 | 20 | 5 | 1 | 1 | 170 | 100 | 36 | 11 | 20 | 4 | 2 | 0 | 173 | 497 |
| 11:00 | 25 | 4 | 2 | 2 | 1 | 0 | 0 | 34 | 26 | 11 | 2 | 3 | 2 | 0 | 1 | 45 | 8 | 3 | 4 | 2 | 1 | 0 | 0 | 18 | 97 |
| 11:15 | 29 | 9 | 4 | 4 | 2 | 2 | 2 | 52 | 31 | 6 | 3 | 1 | 0 | 0 | 0 | 41 | 19 | 3 | 1 | 3 | 1 | 0 | 0 | 27 | 120 |
| 11:30 | 27 | 9 | 3 | 1 | 0 | 1 | 0 | 41 | 33 | 7 | 5 | 3 | 2 | 0 | 0 | 50 | 17 | 6 | 7 | 7 | 1 | 0 | 0 | 38 | 129 |
| 11:45 | 37 | 7 | 3 | 2 | 2 | 0 | 0 | 51 | 34 | 10 | 0 | 5 | 2 | 0 | 0 | 51 | 16 | 4 | 4 | 5 | 1 | 1 | 1 | 32 | 134 |
| 1 Hr | 118 | 29 | 12 | 9 | 5 | 3 | 2 | 178 | 124 | 34 | 10 | 12 | 6 | 0 | 1 | 187 | 60 | 16 | 16 | 17 | 4 | 1 | 1 | 115 | 480 |
| 12:00 | 37 | 13 | 3 | 2 | 1 | 1 | 0 | 57 | 24 | 8 | 1 | 2 | 0 | 0 | 0 | 35 | 20 | 2 | 4 | 6 | 0 | 0 | 0 | 32 | 124 |
| 12:15 | 33 | 6 | 1 | 1 | 0 | 1 | 0 | 42 | 33 | 8 | 3 | 2 | 2 | 1 | 1 | 50 | 32 | 7 | 2 | 4 | 1 | 1 | 0 | 47 | 139 |
| 12:30 | 34 | 10 | 6 | 2 | 2 | 1 | 0 | 55 | 38 | 9 | 2 | 1 | 1 | 0 | 0 | 51 | 25 | 8 | 4 | 4 | 1 | 1 | 1 | 44 | 150 |
| 12:45 | 34 | 15 | 6 | 2 | 2 | 0 | 0 | 59 | 30 | 6 | 2 | 6 | 4 | 0 | 0 | 48 | 20 | 2 | 4 | 2 | 0 | 0 | 0 | 28 | 135 |
| 1 Hr | 138 | 44 | 16 | 7 | 5 | 3 | 0 | 213 | 125 | 31 | 8 | 11 | 7 | 1 | 1 | 184 | 97 | 19 | 14 | 16 | 2 | 2 | 1 | 151 | 548 |
| 13:00 | 36 | 6 | 4 | 0 | 1 | 0 | 0 | 47 | 34 | 9 | 1 | 2 | 2 | 0 | 0 | 48 | 34 | 8 | 2 | 3 | 1 | 0 | 0 | 48 | 143 |
| 13:15 | 50 | 8 | 3 | 0 | 1 | 2 | 0 | 64 | 48 | 10 | 4 | 3 | 0 | 0 | 0 | 65 | 25 | 7 | 3 | 4 | 1 | 0 | 0 | 40 | 169 |
| 13:30 | 46 | 6 | 4 | 0 | 0 | 0 | 0 | 56 | 52 | 8 | 2 | 2 | 1 | 1 | 1 | 67 | 45 | 6 | 3 | 3 | 0 | 0 | 0 | 57 | 180 |
| 13:45 | 39 | 10 | 3 | 2 | 1 | 0 | 0 | 55 | 37 | 8 | 0 | 4 | 1 | 1 | 0 | 51 | 33 | 5 | 5 | 8 | 0 | 0 | 0 | 51 | 157 |
| 1 Hr | 171 | 30 | 14 | 2 | 3 | 2 | 0 | 222 | 171 | 35 | 7 | 11 | 4 | 2 | 1 | 231 | 137 | 26 | 13 | 18 | 2 | 0 | 0 | 196 | 649 |
| 14:00 | 34 | 7 | 0 | 2 | 3 | 0 | 0 | 46 | 33 | 5 | 3 | 4 | 2 | 0 | 1 | 48 | 38 | 10 | 4 | 6 | 0 | 0 | 0 | 58 | 152 |
| 14:15 | 35 | 12 | 3 | 2 | 1 | 1 | 0 | 54 | 34 | 10 | 3 | 5 | 2 | 0 | 0 | 54 | 23 | 6 | 6 | 6 | 0 | 0 | 0 | 41 | 149 |
| 14:30 | 33 | 7 | 2 | 1 | 0 | 0 | 0 | 43 | 44 | 13 | 3 | 2 | 2 | 0 | 0 | 64 | 21 | 6 | 3 | 5 | 0 | 0 | 0 | 35 | 142 |
| 14:45 | 33 | 7 | 4 | 2 | 2 | 1 | 0 | 49 | 38 | 11 | 2 | 5 | 1 | 1 | 2 | 60 | 35 | 14 | 4 | 4 | 1 | 0 | 0 | 58 | 167 |
| 1 Hr | 135 | 33 | 9 | 7 | 6 | 2 | 0 | 192 | 149 | 39 | 11 | 16 | 7 | 1 | 3 | 226 | 117 | 36 | 17 | 21 | 1 | 0 | 0 | 192 | 610 |
| 15:00 | 41 | 11 | 2 | 2 | 2 | 0 | 0 | 58 | 29 | 6 | 0 | 5 | 3 | 0 | 0 | 43 | 33 | 8 | 6 | 5 | 0 | 0 | 0 | 52 | 153 |
| 15:15 | 42 | 10 | 2 | 0 | 1 | 0 | 0 | 55 | 35 | 6 | 1 | 3 | 0 | 0 | 0 | 45 | 38 | 5 | 3 | 2 | 0 | 0 | 0 | 48 | 148 |
| 15:30 | 46 | 1 | 4 | 3 | 0 | 0 | 0 | 54 | 42 | 10 | 2 | 5 | 1 | 0 | 0 | 60 | 27 | 8 | 1 | 7 | 2 | 0 | 0 | 45 | 159 |
| 15:45 | 34 | 11 | 1 | 4 | 2 | 0 | 4 | 56 | 31 | 6 | 4 | 6 | 1 | 0 | 1 | 49 | 28 | 10 | 3 | 8 | 2 | 1 | 0 | 52 | 157 |
| 1 Hr | 163 | 33 | 9 | 9 | 5 | 0 | 4 | 223 | 137 | 28 | 7 | 19 | 5 | 0 | 1 | 197 | 126 | 31 | 13 | 22 | 4 | 1 | 0 | 197 | 617 |
| 16:00 | 39 | 12 | 6 | 3 | 1 | 1 | 1 | 63 | 29 | 6 | 3 | 1 | 2 | 0 | 0 | 41 | 32 | 14 | 1 | 5 | 0 | 0 | 0 | 52 | 156 |
| 16:15 | 48 | 16 | 4 | 4 | 1 | 0 | 0 | 73 | 28 | 5 | 2 | 7 | 1 | 4 | 0 | 47 | 46 | 12 | 2 | 7 | 1 | 1 | 0 | 69 | 189 |
| 16:30 | 51 | 11 | 1 | 4 | 1 | 1 | 0 | 69 | 45 | 8 | 1 | 2 | 1 | 0 | 0 | 57 | 35 | 12 | 4 | 4 | 1 | 0 | 0 | 56 | 182 |
| 16:45 | 47 | 15 | 3 | 4 | 1 | 0 | 1 | 71 | 51 | 6 | 2 | 4 | 2 | 0 | 0 | 65 | 52 | 15 | 1 | 3 | 0 | 0 | 0 | 71 | 207 |
| 1 Hr | 185 | 54 | 14 | 15 | 4 | 2 | 2 | 276 | 153 | 25 | 8 | 14 | 6 | 4 | 0 | 210 | 165 | 53 | 8 | 19 | 2 | 1 | 0 | 248 | 734 |
| 17:00 | 55 | 15 | 7 | 0 | 2 | 3 | 2 | 84 | 53 | 10 | 0 | 3 | 1 | 0 | 3 | 70 | 49 | 14 | 4 | 3 | 0 | 0 | 1 | 71 | 225 |
| 17:15 | 52 | 13 | 3 | 3 | 0 | 0 | 1 | 72 | 48 | 10 | 2 | 3 | 2 | 0 | 1 | 66 | 32 | 6 | 3 | 5 | 0 | 1 | 0 | 47 | 185 |
| 17:30 | 66 | 12 | 2 | 1 | 1 | 1 | 2 | 85 | 58 | 6 | 2 | 6 | 0 | 1 | 0 | 73 | 59 | 13 | 1 | 1 | 0 | 0 | 0 | 74 | 232 |
| 17:45 | 53 | 6 | 4 | 2 | 3 | 1 | 4 | 73 | 40 | 4 | 2 | 2 | 0 | 1 | 0 | 49 | 65 | 7 | 0 | 1 | 0 | 0 | 0 | 73 | 195 |
| 1 Hr | 226 | 46 | 16 | 6 | 6 | 5 | 9 | 314 | 199 | 30 | 6 | 14 | 3 | 2 | 4 | 258 | 205 | 40 | 8 | 10 | 0 | 1 | 1 | 265 | 837 |
| 18:00 | 66 | 10 | 6 | 1 | 3 | 2 | 2 | 90 | 37 | 5 | 3 | 5 | 3 | 1 | 1 | 55 | 61 | 7 | 1 | 3 | 0 | 0 | 1 | 73 | 218 |
| 18:15 | 52 | 5 | 1 | 3 | 2 | 4 | 0 | 67 | 30 | 5 | 0 | 2 | 0 | 1 | 1 | 39 | 57 | 12 | 3 | 2 | 0 | 0 | 0 | 74 | 180 |
| 18:30 | 44 | 7 | 1 | 0 | 0 | 2 | 0 | 54 | 35 | 4 | 0 | 4 | 1 | 0 | 0 | 44 | 47 | 6 | 1 | 1 | 0 | 0 | 0 | 55 | 153 |
| 18:45 | 40 | 9 | 1 | 1 | 2 | 2 | 1 | 56 | 26 | 1 | 0 | 2 | 4 | 0 | 0 | 33 | 33 | 6 | 3 | 3 | 1 | 0 | 0 | 46 | 135 |
| 1 Hr | 202 | 31 | 9 | 5 | 7 | 10 | 3 | 267 | 128 | 15 | 3 | 13 | 8 | 2 | 2 | 171 | 198 | 31 | 8 | 9 | 1 | 0 | 1 | 248 | 686 |
| 12 Hrs | 1654 | 423 | 134 | 83 | 56 | 30 | 23 | 2403 | 1913 | 408 | 90 | 174 | 75 | 16 | 20 | 2696 | 1557 | 388 | 153 | 217 | 28 | 13 | 4 | 2360 | 7459 |
| Check | | | | | | | | 2403 | | | | | | | | 2696 | | | | | | | | 2360 | 7459 |
| Total | 1654 | 423 | 134 | 83 | 56 | 30 | 23 | 2403 | 1913 | 408 | 90 | 174 | 75 | 16 | 20 | 2696 | 1557 | 388 | 153 | 217 | 28 | 13 | 4 | 2360 | 7459 |
| Check | | | | | | | | 2403 | | | | | | | | 2696 | | | | | | | | 2360 | 7459 |

Tracsis plc
Traffic and Data Services

**Client:** Roadplan Consulting
**Job No:** 3082-IRE Huntstown Quarry
**Survey Date:** 22/06/2016
**Survey Method:** Video Observation
**Weather AM:** Cloudy
**Weather PM** Cloudy
**Site No:** Site 2
**Road:** R135 / Elm Road Junction

Entry: Arm A - R135 (N)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Elm Road | | | | | | | | Destination: Arm C - R135 (S) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 6 | 5 | 6 | 0 | 2 | 0 | 50 | 5 | 2 | 0 | 1 | 0 | 0 | 2 | 10 | 60 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 10 | 6 | 4 | 2 | 0 | 1 | 52 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 6 | 58 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 12 | 10 | 7 | 2 | 1 | 1 | 58 | 16 | 2 | 0 | 3 | 0 | 0 | 2 | 23 | 81 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 11 | 6 | 2 | 3 | 0 | 0 | 57 | 11 | 7 | 0 | 1 | 0 | 0 | 0 | 19 | 76 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 39 | 27 | 19 | 7 | 3 | 2 | 217 | 34 | 12 | 0 | 7 | 1 | 0 | 4 | 58 | 275 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 17 | 4 | 7 | 1 | 0 | 0 | 55 | 7 | 3 | 0 | 0 | 0 | 0 | 3 | 13 | 68 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 13 | 10 | 1 | 0 | 1 | 1 | 60 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 8 | 68 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 15 | 9 | 3 | 1 | 0 | 0 | 46 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 5 | 51 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 12 | 6 | 5 | 1 | 0 | 0 | 49 | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 8 | 57 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 57 | 29 | 16 | 3 | 1 | 1 | 210 | 14 | 6 | 0 | 10 | 0 | 0 | 4 | 34 | 244 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 19 | 8 | 1 | 1 | 0 | 0 | 53 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 7 | 60 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 15 | 6 | 5 | 1 | 0 | 1 | 63 | 4 | 2 | 0 | 3 | 0 | 0 | 1 | 10 | 73 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 20 | 8 | 2 | 1 | 0 | 0 | 60 | 6 | 1 | 0 | 7 | 0 | 0 | 0 | 14 | 74 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 15 | 10 | 6 | 0 | 0 | 0 | 52 | 6 | 3 | 0 | 2 | 0 | 0 | 0 | 11 | 63 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 69 | 32 | 14 | 3 | 0 | 1 | 228 | 17 | 8 | 1 | 15 | 0 | 0 | 1 | 42 | 270 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 16 | 4 | 3 | 1 | 0 | 0 | 43 | 2 | 4 | 1 | 2 | 0 | 0 | 1 | 10 | 53 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 19 | 2 | 8 | 1 | 0 | 0 | 57 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 9 | 66 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 22 | 3 | 3 | 1 | 0 | 0 | 51 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 55 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 18 | 6 | 6 | 1 | 0 | 0 | 51 | 5 | 1 | 0 | 7 | 0 | 0 | 0 | 13 | 64 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 75 | 15 | 20 | 4 | 0 | 0 | 202 | 13 | 9 | 1 | 12 | 0 | 0 | 1 | 36 | 238 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 12 | 5 | 4 | 0 | 0 | 0 | 47 | 5 | 2 | 0 | 1 | 0 | 0 | 1 | 9 | 56 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 12 | 4 | 2 | 1 | 0 | 0 | 39 | 3 | 2 | 0 | 3 | 0 | 0 | 0 | 8 | 47 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 20 | 9 | 4 | 1 | 1 | 0 | 66 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 71 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 18 | 5 | 6 | 0 | 0 | 0 | 53 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 8 | 61 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 | 62 | 23 | 16 | 2 | 1 | 0 | 205 | 14 | 7 | 0 | 8 | 0 | 0 | 1 | 30 | 235 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 16 | 7 | 8 | 1 | 0 | 0 | 56 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 10 | 66 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 14 | 7 | 4 | 1 | 0 | 1 | 46 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 57 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 11 | 7 | 3 | 0 | 0 | 0 | 51 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 7 | 58 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 19 | 3 | 5 | 1 | 0 | 0 | 64 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 12 | 76 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 60 | 24 | 20 | 3 | 0 | 1 | 217 | 29 | 6 | 1 | 4 | 0 | 0 | 0 | 40 | 257 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 10 | 3 | 2 | 1 | 0 | 0 | 44 | 9 | 2 | 1 | 6 | 0 | 0 | 0 | 18 | 62 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 12 | 1 | 6 | 1 | 1 | 0 | 52 | 6 | 2 | 0 | 5 | 0 | 0 | 0 | 13 | 65 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 18 | 4 | 4 | 1 | 1 | 0 | 57 | 2 | 2 | 0 | 5 | 0 | 0 | 0 | 9 | 66 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 16 | 6 | 5 | 0 | 0 | 1 | 59 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 68 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 119 | 56 | 14 | 17 | 3 | 2 | 1 | 212 | 24 | 7 | 1 | 17 | 0 | 0 | 0 | 49 | 261 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 14 | 7 | 4 | 1 | 0 | 0 | 56 | 5 | 1 | 0 | 4 | 0 | 0 | 0 | 10 | 66 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 13 | 3 | 2 | 2 | 1 | 0 | 54 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 10 | 64 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 18 | 6 | 5 | 1 | 0 | 0 | 60 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 63 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 17 | 8 | 4 | 0 | 0 | 0 | 55 | 6 | 3 | 0 | 6 | 0 | 0 | 0 | 15 | 70 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 119 | 62 | 24 | 15 | 4 | 1 | 0 | 225 | 20 | 6 | 1 | 11 | 0 | 0 | 0 | 38 | 263 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 9 | 3 | 3 | 2 | 1 | 0 | 47 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 5 | 52 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 8 | 7 | 3 | 0 | 0 | 0 | 46 | 7 | 0 | 0 | 5 | 0 | 0 | 0 | 12 | 58 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 13 | 1 | 6 | 1 | 0 | 0 | 61 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 6 | 67 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 15 | 5 | 6 | 1 | 0 | 0 | 66 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 71 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 45 | 16 | 18 | 4 | 1 | 0 | 220 | 12 | 3 | 1 | 12 | 0 | 0 | 0 | 28 | 248 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 19 | 4 | 3 | 2 | 0 | 0 | 71 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 7 | 78 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 10 | 5 | 4 | 0 | 0 | 0 | 58 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 63 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 18 | 1 | 1 | 1 | 3 | 0 | 71 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 73 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 12 | 3 | 3 | 0 | 0 | 0 | 66 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 7 | 73 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 | 59 | 13 | 11 | 3 | 3 | 0 | 266 | 6 | 2 | 2 | 11 | 0 | 0 | 0 | 21 | 287 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 13 | 1 | 3 | 1 | 0 | 0 | 76 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 5 | 81 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 12 | 1 | 3 | 1 | 1 | 0 | 81 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 5 | 86 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 9 | 4 | 3 | 1 | 2 | 1 | 90 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 94 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 10 | 2 | 4 | 0 | 0 | 0 | 94 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 97 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 269 | 44 | 8 | 13 | 3 | 3 | 1 | 341 | 6 | 3 | 0 | 6 | 0 | 0 | 2 | 17 | 358 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 6 | 1 | 1 | 1 | 1 | 0 | 74 | 2 | 0 | 0 | 5 | 1 | 0 | 1 | 9 | 83 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 7 | 1 | 0 | 1 | 0 | 0 | 43 | 1 | 0 | 2 | 3 | 0 | 0 | 1 | 7 | 50 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 7 | 0 | 1 | 0 | 1 | 0 | 48 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 50 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 4 | 0 | 0 | 2 | 0 | 0 | 33 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 34 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 164 | 24 | 2 | 2 | 4 | 2 | 0 | 198 | 5 | 1 | 2 | 8 | 1 | 0 | 2 | 19 | 217 |
| 12 Hrs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1614 | 652 | 227 | 181 | 43 | 17 | 7 | 2741 | 194 | 70 | 10 | 121 | 2 | 0 | 15 | 412 | 3153 |
| Check | | | | | | | | 0 | | | | | | | | 2741 | | | | | | | | 412 | 3153 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1614 | 652 | 227 | 181 | 43 | 17 | 7 | 2741 | 194 | 70 | 10 | 121 | 2 | 0 | 15 | 412 | 3153 |
| Check | | | | | | | | 0 | | | | | | | | 2741 | | | | | | | | 412 | 3153 |

Entry: Arm B - Elm Road

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Elm Road | | | | | | | | Destination: Arm C - R135 (S) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:15 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:30 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 5 |
| 07:45 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 1 Hr | 7 | 5 | 3 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 17 |
| 08:00 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 08:15 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 |
| 08:30 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 08:45 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 1 Hr | 12 | 9 | 1 | 2 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 25 |
| 09:00 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 09:15 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 09:30 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 09:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 4 | 6 | 3 | 1 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 10:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| 10:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 10:30 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 10:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| 11:00 | 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 |
| 11:15 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 11:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 11:45 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 Hr | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| 12:00 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:15 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:30 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 12:45 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 1 Hr | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 15 |
| 13:00 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 |
| 13:15 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 13:30 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 13:45 | 0 | 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 Hr | 11 | 2 | 2 | 0 | 1 | 0 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 19 |
| 14:00 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 14:15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 14:30 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 14:45 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 16 |
| 15:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 15:15 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 15:30 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 15:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 16:00 | 3 | 3 | 1 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 16:15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 16:30 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 16:45 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 10 | 6 | 2 | 0 | 0 | 0 | 1 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 17:00 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 17:15 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 17:30 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 |
| 17:45 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 1 Hr | 25 | 2 | 1 | 0 | 0 | 0 | 1 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 32 |
| 18:00 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 18:15 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 18:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 18:45 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 4 | 5 | 0 | 1 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 12 Hrs | 101 | 51 | 13 | 7 | 1 | 0 | 5 | 178 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 12 | 192 |
| Check | | | | | | | | 178 | | | | | | | | 2 | | | | | | | | 12 | 192 |
| Total | 101 | 51 | 13 | 7 | 1 | 0 | 5 | 178 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 12 | 192 |
| Check | | | | | | | | 178 | | | | | | | | 2 | | | | | | | | 12 | 192 |

Entry: Arm C - R135 (S)

| | Destination: Arm A - R135 (N) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 29 | 13 | 6 | 2 | 0 | 0 | 0 | 50 |
| 07:15 | 28 | 9 | 5 | 4 | 1 | 0 | 0 | 47 |
| 07:30 | 31 | 13 | 7 | 10 | 3 | 0 | 0 | 64 |
| 07:45 | 52 | 26 | 2 | 10 | 1 | 0 | 0 | 91 |
| 1 Hr | 140 | 61 | 20 | 26 | 5 | 0 | 0 | 252 |
| 08:00 | 46 | 14 | 5 | 6 | 0 | 0 | 1 | 72 |
| 08:15 | 62 | 20 | 2 | 5 | 1 | 2 | 0 | 92 |
| 08:30 | 50 | 22 | 3 | 2 | 0 | 1 | 0 | 78 |
| 08:45 | 57 | 15 | 9 | 12 | 2 | 1 | 0 | 96 |
| 1 Hr | 215 | 71 | 19 | 25 | 3 | 4 | 1 | 338 |
| 09:00 | 47 | 15 | 8 | 12 | 1 | 0 | 0 | 83 |
| 09:15 | 44 | 14 | 3 | 8 | 2 | 1 | 0 | 72 |
| 09:30 | 33 | 18 | 5 | 9 | 3 | 0 | 0 | 68 |
| 09:45 | 23 | 23 | 6 | 5 | 0 | 0 | 0 | 57 |
| 1 Hr | 147 | 70 | 22 | 34 | 6 | 1 | 0 | 280 |
| 10:00 | 30 | 17 | 9 | 7 | 1 | 1 | 0 | 65 |
| 10:15 | 25 | 12 | 6 | 6 | 2 | 0 | 0 | 51 |
| 10:30 | 26 | 22 | 3 | 4 | 2 | 0 | 0 | 57 |
| 10:45 | 22 | 17 | 5 | 7 | 1 | 0 | 0 | 52 |
| 1 Hr | 103 | 68 | 23 | 24 | 6 | 1 | 0 | 225 |
| 11:00 | 27 | 14 | 8 | 4 | 1 | 1 | 0 | 55 |
| 11:15 | 17 | 22 | 7 | 10 | 0 | 0 | 0 | 56 |
| 11:30 | 17 | 21 | 6 | 9 | 0 | 0 | 0 | 53 |
| 11:45 | 27 | 17 | 7 | 5 | 2 | 0 | 0 | 58 |
| 1 Hr | 88 | 74 | 28 | 28 | 3 | 1 | 0 | 222 |
| 12:00 | 26 | 15 | 9 | 5 | 1 | 0 | 0 | 56 |
| 12:15 | 40 | 23 | 3 | 10 | 2 | 0 | 0 | 78 |
| 12:30 | 42 | 17 | 8 | 5 | 2 | 0 | 0 | 74 |
| 12:45 | 34 | 10 | 10 | 6 | 0 | 0 | 0 | 60 |
| 1 Hr | 142 | 65 | 30 | 26 | 5 | 0 | 0 | 268 |
| 13:00 | 34 | 19 | 10 | 7 | 1 | 0 | 0 | 71 |
| 13:15 | 39 | 16 | 4 | 4 | 1 | 0 | 0 | 64 |
| 13:30 | 37 | 11 | 8 | 6 | 0 | 0 | 0 | 62 |
| 13:45 | 44 | 21 | 7 | 10 | 2 | 0 | 0 | 84 |
| 1 Hr | 154 | 67 | 29 | 27 | 4 | 0 | 0 | 281 |
| 14:00 | 25 | 15 | 5 | 9 | 1 | 1 | 0 | 56 |
| 14:15 | 27 | 20 | 8 | 4 | 1 | 0 | 0 | 60 |
| 14:30 | 27 | 9 | 4 | 10 | 1 | 0 | 0 | 51 |
| 14:45 | 38 | 22 | 11 | 8 | 1 | 1 | 0 | 81 |
| 1 Hr | 117 | 66 | 28 | 31 | 4 | 2 | 0 | 248 |
| 15:00 | 27 | 11 | 9 | 7 | 1 | 0 | 0 | 55 |
| 15:15 | 38 | 18 | 8 | 12 | 2 | 0 | 0 | 78 |
| 15:30 | 37 | 26 | 8 | 9 | 2 | 0 | 0 | 82 |
| 15:45 | 29 | 19 | 9 | 6 | 1 | 1 | 2 | 67 |
| 1 Hr | 131 | 74 | 34 | 34 | 6 | 1 | 2 | 282 |
| 16:00 | 21 | 24 | 7 | 12 | 1 | 0 | 0 | 65 |
| 16:15 | 36 | 12 | 5 | 8 | 1 | 0 | 0 | 62 |
| 16:30 | 32 | 13 | 2 | 14 | 0 | 2 | 1 | 64 |
| 16:45 | 49 | 14 | 7 | 10 | 2 | 0 | 0 | 82 |
| 1 Hr | 138 | 63 | 21 | 44 | 4 | 2 | 1 | 273 |
| 17:00 | 56 | 17 | 8 | 7 | 1 | 1 | 1 | 91 |
| 17:15 | 47 | 12 | 2 | 7 | 2 | 2 | 0 | 72 |
| 17:30 | 49 | 11 | 7 | 4 | 1 | 0 | 3 | 75 |
| 17:45 | 42 | 6 | 7 | 4 | 2 | 1 | 1 | 63 |
| 1 Hr | 194 | 46 | 24 | 22 | 6 | 4 | 5 | 301 |
| 18:00 | 33 | 4 | 4 | 2 | 2 | 1 | 2 | 48 |
| 18:15 | 34 | 6 | 3 | 5 | 2 | 1 | 0 | 51 |
| 18:30 | 28 | 6 | 3 | 3 | 1 | 1 | 1 | 43 |
| 18:45 | 16 | 5 | 3 | 0 | 1 | 1 | 1 | 27 |
| 1 Hr | 111 | 21 | 13 | 10 | 6 | 4 | 4 | 169 |
| 12 Hrs | 1680 | 746 | 291 | 331 | 58 | 20 | 13 | 3139 |
| Check | | | | | | | | 3139 |
| Total | 1680 | 746 | 291 | 331 | 58 | 20 | 13 | 3139 |
| Check | | | | | | | | 3139 |

| | Destination: Arm B - Elm Road | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 8 | 11 | 0 | 3 | 0 | 0 | 0 | 22 |
| 07:15 | 8 | 12 | 1 | 7 | 0 | 0 | 0 | 28 |
| 07:30 | 9 | 8 | 0 | 9 | 0 | 0 | 0 | 26 |
| 07:45 | 9 | 6 | 1 | 8 | 0 | 0 | 0 | 24 |
| 1 Hr | 34 | 37 | 2 | 27 | 0 | 0 | 0 | 100 |
| 08:00 | 10 | 5 | 0 | 21 | 0 | 0 | 0 | 36 |
| 08:15 | 21 | 3 | 1 | 11 | 0 | 0 | 0 | 36 |
| 08:30 | 27 | 4 | 0 | 7 | 0 | 0 | 0 | 38 |
| 08:45 | 20 | 1 | 1 | 15 | 0 | 0 | 0 | 37 |
| 1 Hr | 78 | 13 | 2 | 54 | 0 | 0 | 0 | 147 |
| 09:00 | 20 | 1 | 1 | 5 | 0 | 0 | 0 | 27 |
| 09:15 | 11 | 4 | 1 | 11 | 0 | 0 | 0 | 27 |
| 09:30 | 8 | 5 | 0 | 15 | 0 | 0 | 0 | 28 |
| 09:45 | 7 | 4 | 1 | 14 | 0 | 0 | 0 | 26 |
| 1 Hr | 46 | 14 | 3 | 45 | 0 | 0 | 0 | 108 |
| 10:00 | 8 | 2 | 3 | 18 | 0 | 0 | 0 | 31 |
| 10:15 | 8 | 2 | 1 | 10 | 0 | 0 | 0 | 21 |
| 10:30 | 8 | 5 | 0 | 8 | 0 | 0 | 0 | 21 |
| 10:45 | 11 | 3 | 0 | 12 | 0 | 0 | 0 | 26 |
| 1 Hr | 35 | 12 | 4 | 48 | 0 | 0 | 0 | 99 |
| 11:00 | 9 | 3 | 2 | 14 | 0 | 0 | 0 | 28 |
| 11:15 | 9 | 4 | 1 | 14 | 0 | 0 | 0 | 28 |
| 11:30 | 6 | 1 | 2 | 12 | 0 | 0 | 0 | 21 |
| 11:45 | 8 | 2 | 1 | 17 | 0 | 0 | 0 | 28 |
| 1 Hr | 32 | 10 | 6 | 57 | 0 | 0 | 0 | 105 |
| 12:00 | 4 | 2 | 0 | 10 | 0 | 0 | 0 | 16 |
| 12:15 | 15 | 4 | 1 | 10 | 0 | 0 | 0 | 30 |
| 12:30 | 4 | 4 | 0 | 10 | 0 | 0 | 0 | 18 |
| 12:45 | 10 | 2 | 2 | 9 | 0 | 0 | 0 | 23 |
| 1 Hr | 33 | 12 | 3 | 39 | 0 | 0 | 0 | 87 |
| 13:00 | 15 | 5 | 0 | 11 | 0 | 0 | 0 | 31 |
| 13:15 | 15 | 4 | 0 | 11 | 1 | 0 | 0 | 31 |
| 13:30 | 8 | 5 | 1 | 12 | 0 | 0 | 0 | 26 |
| 13:45 | 16 | 2 | 3 | 8 | 0 | 0 | 0 | 29 |
| 1 Hr | 54 | 16 | 4 | 42 | 1 | 0 | 0 | 117 |
| 14:00 | 16 | 3 | 0 | 14 | 0 | 0 | 0 | 33 |
| 14:15 | 8 | 4 | 1 | 10 | 0 | 0 | 0 | 23 |
| 14:30 | 8 | 2 | 0 | 8 | 0 | 0 | 0 | 18 |
| 14:45 | 16 | 1 | 2 | 10 | 0 | 0 | 0 | 29 |
| 1 Hr | 48 | 10 | 3 | 42 | 0 | 0 | 0 | 103 |
| 15:00 | 16 | 4 | 2 | 12 | 0 | 1 | 0 | 35 |
| 15:15 | 22 | 3 | 1 | 9 | 0 | 0 | 0 | 35 |
| 15:30 | 19 | 3 | 1 | 10 | 0 | 0 | 0 | 33 |
| 15:45 | 14 | 11 | 1 | 12 | 0 | 0 | 0 | 38 |
| 1 Hr | 71 | 21 | 5 | 43 | 0 | 1 | 0 | 141 |
| 16:00 | 16 | 13 | 2 | 8 | 0 | 0 | 0 | 39 |
| 16:15 | 11 | 12 | 5 | 4 | 0 | 0 | 0 | 32 |
| 16:30 | 16 | 6 | 0 | 4 | 0 | 0 | 0 | 26 |
| 16:45 | 21 | 8 | 4 | 4 | 0 | 1 | 0 | 38 |
| 1 Hr | 64 | 39 | 11 | 20 | 0 | 1 | 0 | 135 |
| 17:00 | 35 | 7 | 4 | 1 | 0 | 2 | 0 | 49 |
| 17:15 | 23 | 6 | 2 | 1 | 0 | 0 | 0 | 32 |
| 17:30 | 13 | 8 | 1 | 3 | 0 | 0 | 0 | 25 |
| 17:45 | 11 | 9 | 1 | 2 | 0 | 0 | 0 | 23 |
| 1 Hr | 82 | 30 | 8 | 7 | 0 | 2 | 0 | 129 |
| 18:00 | 15 | 7 | 1 | 0 | 0 | 0 | 0 | 23 |
| 18:15 | 12 | 5 | 0 | 4 | 0 | 0 | 0 | 21 |
| 18:30 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 10 |
| 18:45 | 11 | 5 | 0 | 1 | 0 | 0 | 0 | 17 |
| 1 Hr | 45 | 19 | 2 | 5 | 0 | 0 | 0 | 71 |
| 12 Hrs | 622 | 233 | 53 | 429 | 1 | 4 | 0 | 1342 |
| Check | | | | | | | | 1342 |
| Total | 622 | 233 | 53 | 429 | 1 | 4 | 0 | 1342 |
| Check | | | | | | | | 1342 |

| | Destination: Arm C - R135 (S) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 352 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 128 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 116 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 485 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 388 |
| 10:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 97 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 325 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 92 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 355 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 398 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 351 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 423 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 408 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 430 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 |
| 12 Hrs | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4482 |
| Check | | | | | | | | 1 | 4482 |
| Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4482 |
| Check | | | | | | | | 1 | 4482 |

ORIGIN SUMMARY

| | Origin: Arm A - R135 (N) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 36 | 8 | 5 | 7 | 0 | 2 | 2 | 60 |
| 07:15 | 31 | 11 | 6 | 6 | 3 | 0 | 1 | 58 |
| 07:30 | 41 | 14 | 10 | 10 | 2 | 1 | 3 | 81 |
| 07:45 | 46 | 18 | 6 | 3 | 3 | 0 | 0 | 76 |
| 1 Hr | 154 | 51 | 27 | 26 | 8 | 3 | 6 | 275 |
| 08:00 | 33 | 20 | 4 | 7 | 1 | 0 | 3 | 68 |
| 08:15 | 37 | 14 | 10 | 5 | 0 | 1 | 1 | 68 |
| 08:30 | 20 | 15 | 9 | 5 | 1 | 0 | 1 | 51 |
| 08:45 | 27 | 14 | 6 | 9 | 1 | 0 | 0 | 57 |
| 1 Hr | 117 | 63 | 29 | 26 | 3 | 1 | 5 | 244 |
| 09:00 | 25 | 21 | 9 | 4 | 1 | 0 | 0 | 60 |
| 09:15 | 39 | 17 | 6 | 8 | 1 | 0 | 2 | 73 |
| 09:30 | 35 | 21 | 8 | 9 | 1 | 0 | 0 | 74 |
| 09:45 | 27 | 18 | 10 | 8 | 0 | 0 | 0 | 63 |
| 1 Hr | 126 | 77 | 33 | 29 | 3 | 0 | 2 | 270 |
| 10:00 | 21 | 20 | 5 | 5 | 1 | 0 | 1 | 53 |
| 10:15 | 30 | 23 | 2 | 10 | 1 | 0 | 0 | 66 |
| 10:30 | 25 | 22 | 3 | 4 | 1 | 0 | 0 | 55 |
| 10:45 | 25 | 19 | 6 | 13 | 1 | 0 | 0 | 64 |
| 1 Hr | 101 | 84 | 16 | 32 | 4 | 0 | 1 | 238 |
| 11:00 | 31 | 14 | 5 | 5 | 0 | 0 | 1 | 56 |
| 11:15 | 23 | 14 | 4 | 5 | 1 | 0 | 0 | 47 |
| 11:30 | 33 | 23 | 9 | 4 | 1 | 1 | 0 | 71 |
| 11:45 | 28 | 18 | 5 | 10 | 0 | 0 | 0 | 61 |
| 1 Hr | 115 | 69 | 23 | 24 | 2 | 1 | 1 | 235 |
| 12:00 | 31 | 16 | 7 | 11 | 1 | 0 | 0 | 66 |
| 12:15 | 28 | 16 | 7 | 4 | 1 | 0 | 1 | 57 |
| 12:30 | 34 | 13 | 7 | 4 | 0 | 0 | 0 | 58 |
| 12:45 | 45 | 21 | 4 | 5 | 1 | 0 | 0 | 76 |
| 1 Hr | 138 | 66 | 25 | 24 | 3 | 0 | 1 | 257 |
| 13:00 | 37 | 12 | 4 | 8 | 1 | 0 | 0 | 62 |
| 13:15 | 37 | 14 | 1 | 11 | 1 | 1 | 0 | 65 |
| 13:30 | 31 | 20 | 4 | 9 | 1 | 1 | 0 | 66 |
| 13:45 | 38 | 17 | 6 | 6 | 0 | 0 | 1 | 68 |
| 1 Hr | 143 | 63 | 15 | 34 | 3 | 2 | 1 | 261 |
| 14:00 | 35 | 15 | 7 | 8 | 1 | 0 | 0 | 66 |
| 14:15 | 40 | 14 | 4 | 3 | 2 | 1 | 0 | 64 |
| 14:30 | 32 | 19 | 6 | 5 | 1 | 0 | 0 | 63 |
| 14:45 | 32 | 20 | 8 | 10 | 0 | 0 | 0 | 70 |
| 1 Hr | 139 | 68 | 25 | 26 | 4 | 1 | 0 | 263 |
| 15:00 | 30 | 9 | 3 | 7 | 2 | 1 | 0 | 52 |
| 15:15 | 35 | 8 | 7 | 8 | 0 | 0 | 0 | 58 |
| 15:30 | 42 | 16 | 1 | 7 | 1 | 0 | 0 | 67 |
| 15:45 | 41 | 15 | 6 | 8 | 1 | 0 | 0 | 71 |
| 1 Hr | 148 | 48 | 17 | 30 | 4 | 1 | 0 | 248 |
| 16:00 | 43 | 21 | 5 | 7 | 2 | 0 | 0 | 78 |
| 16:15 | 41 | 10 | 6 | 6 | 0 | 0 | 0 | 63 |
| 16:30 | 47 | 18 | 1 | 3 | 1 | 3 | 0 | 73 |
| 16:45 | 52 | 12 | 3 | 6 | 0 | 0 | 0 | 73 |
| 1 Hr | 183 | 61 | 15 | 22 | 3 | 3 | 0 | 287 |
| 17:00 | 60 | 14 | 1 | 4 | 1 | 0 | 1 | 81 |
| 17:15 | 65 | 12 | 1 | 5 | 1 | 1 | 1 | 86 |
| 17:30 | 71 | 11 | 4 | 4 | 1 | 2 | 1 | 94 |
| 17:45 | 79 | 10 | 2 | 6 | 0 | 0 | 0 | 97 |
| 1 Hr | 275 | 47 | 8 | 19 | 3 | 3 | 3 | 358 |
| 18:00 | 66 | 6 | 1 | 6 | 2 | 1 | 1 | 83 |
| 18:15 | 35 | 7 | 3 | 3 | 1 | 0 | 1 | 50 |
| 18:30 | 41 | 7 | 0 | 1 | 0 | 1 | 0 | 50 |
| 18:45 | 27 | 5 | 0 | 0 | 2 | 0 | 0 | 34 |
| 1 Hr | 169 | 25 | 4 | 10 | 5 | 2 | 2 | 217 |
| 12 Hrs | 1808 | 722 | 237 | 302 | 45 | 17 | 22 | 3153 |
| Check | | | | | | | | 3153 |
| Total | 1808 | 722 | 237 | 302 | 45 | 17 | 22 | 3153 |
| Check | | | | | | | | 3153 |

| | Origin: Arm B - Elm Road | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:15 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 5 |
| 07:30 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:45 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| 1 Hr | 8 | 6 | 3 | 0 | 0 | 0 | 0 | 17 |
| 08:00 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 7 |
| 08:15 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 6 |
| 08:30 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 5 |
| 08:45 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 7 |
| 1 Hr | 12 | 9 | 2 | 2 | 0 | 0 | 0 | 25 |
| 09:00 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 5 |
| 09:15 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 6 |
| 09:30 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 09:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 4 | 6 | 3 | 1 | 0 | 0 | 0 | 14 |
| 10:00 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 10:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 10:30 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 10:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 8 |
| 11:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 11:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 11:45 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1 Hr | 4 | 3 | 0 | 0 | 0 | 0 | 1 | 8 |
| 12:00 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:15 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:30 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 12:45 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 Hr | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 15 |
| 13:00 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 13:15 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 5 |
| 13:30 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 14 | 2 | 2 | 0 | 1 | 0 | 0 | 19 |
| 14:00 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 14:15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 14:30 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 14:45 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 1 Hr | 12 | 3 | 0 | 1 | 0 | 0 | 0 | 16 |
| 15:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 15:15 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 15:30 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 15:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 Hr | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 7 |
| 16:00 | 3 | 3 | 1 | 0 | 0 | 0 | 1 | 8 |
| 16:15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 16:30 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 5 |
| 16:45 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1 Hr | 10 | 6 | 2 | 0 | 0 | 0 | 1 | 19 |
| 17:00 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 8 |
| 17:15 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 17:30 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 17:45 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1 Hr | 28 | 2 | 1 | 0 | 0 | 0 | 1 | 32 |
| 18:00 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 5 |
| 18:15 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 |
| 18:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 18:45 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 1 Hr | 4 | 5 | 0 | 1 | 0 | 0 | 2 | 12 |
| 12 Hrs | 111 | 54 | 14 | 7 | 1 | 0 | 5 | 192 |
| Check | | | | | | | | 192 |
| Total | 111 | 54 | 14 | 7 | 1 | 0 | 5 | 192 |
| Check | | | | | | | | 192 |

| | Origin: Arm C - R135 (S) | | | | | | | | Origin |
|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 37 | 24 | 6 | 5 | 0 | 0 | 0 | 72 | 133 |
| 07:15 | 36 | 21 | 6 | 11 | 1 | 0 | 0 | 75 | 138 |
| 07:30 | 40 | 21 | 7 | 19 | 3 | 0 | 0 | 90 | 176 |
| 07:45 | 61 | 32 | 3 | 18 | 1 | 0 | 0 | 115 | 197 |
| 1 Hr | 174 | 98 | 22 | 53 | 5 | 0 | 0 | 352 | 644 |
| 08:00 | 56 | 19 | 5 | 27 | 0 | 0 | 1 | 108 | 183 |
| 08:15 | 83 | 23 | 3 | 16 | 1 | 2 | 0 | 128 | 202 |
| 08:30 | 77 | 26 | 3 | 9 | 0 | 1 | 0 | 116 | 172 |
| 08:45 | 77 | 16 | 10 | 27 | 2 | 1 | 0 | 133 | 197 |
| 1 Hr | 293 | 84 | 21 | 79 | 3 | 4 | 1 | 485 | 754 |
| 09:00 | 67 | 16 | 9 | 17 | 1 | 0 | 0 | 110 | 175 |
| 09:15 | 55 | 18 | 4 | 19 | 2 | 1 | 0 | 99 | 178 |
| 09:30 | 41 | 23 | 5 | 24 | 3 | 0 | 0 | 96 | 172 |
| 09:45 | 30 | 27 | 7 | 19 | 0 | 0 | 0 | 83 | 147 |
| 1 Hr | 193 | 84 | 25 | 79 | 6 | 1 | 0 | 388 | 672 |
| 10:00 | 39 | 19 | 12 | 25 | 1 | 1 | 0 | 97 | 153 |
| 10:15 | 33 | 14 | 7 | 16 | 2 | 0 | 0 | 72 | 139 |
| 10:30 | 34 | 27 | 3 | 12 | 2 | 0 | 0 | 78 | 135 |
| 10:45 | 33 | 20 | 5 | 19 | 1 | 0 | 0 | 78 | 144 |
| 1 Hr | 139 | 80 | 27 | 72 | 6 | 1 | 0 | 325 | 571 |
| 11:00 | 36 | 17 | 10 | 18 | 1 | 1 | 0 | 83 | 140 |
| 11:15 | 26 | 26 | 8 | 24 | 0 | 0 | 0 | 84 | 133 |
| 11:30 | 23 | 22 | 8 | 21 | 0 | 0 | 0 | 74 | 147 |
| 11:45 | 35 | 19 | 8 | 22 | 2 | 0 | 0 | 86 | 150 |
| 1 Hr | 120 | 84 | 34 | 85 | 3 | 1 | 0 | 327 | 570 |
| 12:00 | 30 | 17 | 9 | 15 | 1 | 0 | 0 | 72 | 140 |
| 12:15 | 55 | 27 | 4 | 20 | 2 | 0 | 0 | 108 | 168 |
| 12:30 | 46 | 21 | 8 | 15 | 2 | 0 | 0 | 92 | 155 |
| 12:45 | 44 | 12 | 12 | 15 | 0 | 0 | 0 | 83 | 164 |
| 1 Hr | 175 | 77 | 33 | 65 | 5 | 0 | 0 | 355 | 627 |
| 13:00 | 49 | 24 | 10 | 18 | 1 | 0 | 0 | 102 | 171 |
| 13:15 | 54 | 20 | 4 | 15 | 2 | 0 | 0 | 95 | 165 |
| 13:30 | 45 | 16 | 9 | 18 | 0 | 0 | 0 | 88 | 161 |
| 13:45 | 60 | 23 | 10 | 18 | 2 | 0 | 0 | 113 | 181 |
| 1 Hr | 208 | 83 | 33 | 69 | 5 | 0 | 0 | 398 | 678 |
| 14:00 | 41 | 18 | 5 | 23 | 1 | 1 | 0 | 89 | 160 |
| 14:15 | 35 | 24 | 9 | 14 | 1 | 0 | 0 | 83 | 153 |
| 14:30 | 35 | 11 | 4 | 18 | 1 | 0 | 0 | 69 | 135 |
| 14:45 | 54 | 23 | 13 | 18 | 1 | 1 | 0 | 110 | 182 |
| 1 Hr | 165 | 76 | 31 | 73 | 4 | 2 | 0 | 351 | 630 |
| 15:00 | 43 | 15 | 11 | 19 | 1 | 1 | 0 | 90 | 143 |
| 15:15 | 60 | 21 | 9 | 21 | 2 | 0 | 0 | 113 | 173 |
| 15:30 | 56 | 29 | 9 | 19 | 2 | 0 | 0 | 115 | 185 |
| 15:45 | 43 | 30 | 10 | 18 | 1 | 1 | 2 | 105 | 177 |
| 1 Hr | 202 | 95 | 39 | 77 | 6 | 2 | 2 | 423 | 678 |
| 16:00 | 37 | 37 | 9 | 20 | 1 | 0 | 0 | 104 | 190 |
| 16:15 | 47 | 24 | 10 | 12 | 1 | 0 | 0 | 94 | 159 |
| 16:30 | 48 | 19 | 2 | 18 | 0 | 2 | 1 | 90 | 168 |
| 16:45 | 70 | 22 | 11 | 14 | 2 | 1 | 0 | 120 | 197 |
| 1 Hr | 202 | 102 | 32 | 64 | 4 | 3 | 1 | 408 | 714 |
| 17:00 | 91 | 24 | 12 | 8 | 1 | 3 | 1 | 140 | 229 |
| 17:15 | 70 | 18 | 4 | 8 | 2 | 2 | 0 | 104 | 195 |
| 17:30 | 62 | 19 | 8 | 7 | 1 | 0 | 3 | 100 | 208 |
| 17:45 | 53 | 15 | 8 | 6 | 2 | 1 | 1 | 86 | 188 |
| 1 Hr | 276 | 76 | 32 | 29 | 6 | 6 | 5 | 430 | 820 |
| 18:00 | 48 | 11 | 5 | 2 | 2 | 1 | 2 | 71 | 159 |
| 18:15 | 46 | 11 | 3 | 9 | 2 | 1 | 0 | 72 | 126 |
| 18:30 | 35 | 8 | 4 | 3 | 1 | 1 | 1 | 53 | 104 |
| 18:45 | 27 | 10 | 3 | 1 | 1 | 1 | 1 | 44 | 80 |
| 1 Hr | 156 | 40 | 15 | 15 | 6 | 4 | 4 | 240 | 469 |
| 12 Hrs | 2303 | 979 | 344 | 760 | 59 | 24 | 13 | 4482 | 7827 |
| Check | | | | | | | | 4482 | 7827 |
| Total | 2303 | 979 | 344 | 760 | 59 | 24 | 13 | 4482 | 7827 |
| Check | | | | | | | | 4482 | 7827 |

DESTINATION SUMMARY

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Elm Road | | | | | | | | Destination: Arm C - R135 (S) | | | | | | | | Dest |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 29 | 14 | 6 | 2 | 0 | 0 | 0 | 51 | 39 | 17 | 5 | 9 | 0 | 2 | 0 | 72 | 5 | 2 | 0 | 1 | 0 | 0 | 2 | 10 | 133 |
| 07:15 | 30 | 9 | 8 | 4 | 1 | 0 | 0 | 52 | 37 | 22 | 7 | 11 | 2 | 0 | 1 | 80 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 6 | 138 |
| 07:30 | 32 | 15 | 7 | 10 | 3 | 0 | 0 | 67 | 34 | 20 | 10 | 16 | 2 | 1 | 1 | 84 | 17 | 3 | 0 | 3 | 0 | 0 | 2 | 25 | 176 |
| 07:45 | 56 | 28 | 2 | 10 | 1 | 0 | 0 | 97 | 44 | 17 | 7 | 10 | 3 | 0 | 0 | 81 | 11 | 7 | 0 | 1 | 0 | 0 | 0 | 19 | 197 |
| 1 Hr | 147 | 66 | 23 | 26 | 5 | 0 | 0 | 267 | 154 | 76 | 29 | 46 | 7 | 3 | 2 | 317 | 35 | 13 | 0 | 7 | 1 | 0 | 4 | 60 | 644 |
| 08:00 | 48 | 19 | 5 | 6 | 0 | 0 | 1 | 79 | 36 | 22 | 4 | 28 | 1 | 0 | 0 | 91 | 7 | 3 | 0 | 0 | 0 | 0 | 3 | 13 | 183 |
| 08:15 | 65 | 21 | 2 | 6 | 1 | 2 | 0 | 97 | 55 | 16 | 11 | 12 | 0 | 1 | 1 | 96 | 3 | 1 | 1 | 4 | 0 | 0 | 0 | 9 | 202 |
| 08:30 | 52 | 23 | 4 | 3 | 0 | 1 | 0 | 83 | 45 | 19 | 9 | 10 | 1 | 0 | 0 | 84 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 5 | 172 |
| 08:45 | 62 | 17 | 9 | 12 | 2 | 1 | 0 | 103 | 45 | 13 | 7 | 20 | 1 | 0 | 0 | 86 | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 8 | 197 |
| 1 Hr | 227 | 80 | 20 | 27 | 3 | 4 | 1 | 362 | 181 | 70 | 31 | 70 | 3 | 1 | 1 | 357 | 14 | 6 | 1 | 10 | 0 | 0 | 4 | 35 | 754 |
| 09:00 | 49 | 17 | 9 | 12 | 1 | 0 | 0 | 88 | 44 | 20 | 9 | 6 | 1 | 0 | 0 | 80 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 7 | 175 |
| 09:15 | 45 | 17 | 4 | 9 | 2 | 1 | 0 | 78 | 46 | 19 | 7 | 16 | 1 | 0 | 1 | 90 | 4 | 2 | 0 | 3 | 0 | 0 | 1 | 10 | 178 |
| 09:30 | 34 | 18 | 6 | 9 | 3 | 0 | 0 | 70 | 37 | 25 | 8 | 17 | 1 | 0 | 0 | 88 | 6 | 1 | 0 | 7 | 0 | 0 | 0 | 14 | 172 |
| 09:45 | 23 | 24 | 6 | 5 | 0 | 0 | 0 | 58 | 28 | 19 | 11 | 20 | 0 | 0 | 0 | 78 | 6 | 3 | 0 | 2 | 0 | 0 | 0 | 11 | 147 |
| 1 Hr | 151 | 76 | 25 | 35 | 6 | 1 | 0 | 294 | 155 | 83 | 35 | 59 | 3 | 0 | 1 | 336 | 17 | 8 | 1 | 15 | 0 | 0 | 1 | 42 | 672 |
| 10:00 | 30 | 19 | 9 | 7 | 1 | 1 | 0 | 67 | 27 | 18 | 7 | 21 | 1 | 0 | 0 | 74 | 4 | 4 | 1 | 2 | 0 | 0 | 1 | 12 | 153 |
| 10:15 | 25 | 12 | 7 | 6 | 2 | 0 | 0 | 52 | 35 | 21 | 3 | 18 | 1 | 0 | 0 | 78 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 9 | 139 |
| 10:30 | 27 | 23 | 3 | 4 | 2 | 0 | 0 | 59 | 30 | 27 | 3 | 11 | 1 | 0 | 0 | 72 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 135 |
| 10:45 | 22 | 19 | 5 | 7 | 1 | 0 | 0 | 54 | 31 | 21 | 6 | 18 | 1 | 0 | 0 | 77 | 5 | 1 | 0 | 7 | 0 | 0 | 0 | 13 | 144 |
| 1 Hr | 104 | 73 | 24 | 24 | 6 | 1 | 0 | 232 | 123 | 87 | 19 | 68 | 4 | 0 | 0 | 301 | 15 | 9 | 1 | 12 | 0 | 0 | 1 | 38 | 571 |
| 11:00 | 27 | 14 | 8 | 4 | 1 | 1 | 0 | 55 | 35 | 15 | 7 | 18 | 0 | 0 | 0 | 75 | 6 | 2 | 0 | 1 | 0 | 0 | 1 | 10 | 140 |
| 11:15 | 17 | 23 | 7 | 10 | 0 | 0 | 1 | 58 | 29 | 16 | 5 | 16 | 1 | 0 | 0 | 67 | 3 | 2 | 0 | 3 | 0 | 0 | 0 | 8 | 133 |
| 11:30 | 17 | 23 | 6 | 9 | 0 | 0 | 0 | 55 | 37 | 21 | 11 | 16 | 1 | 1 | 0 | 87 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 147 |
| 11:45 | 29 | 17 | 7 | 5 | 2 | 0 | 0 | 60 | 33 | 20 | 6 | 23 | 0 | 0 | 0 | 82 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 8 | 150 |
| 1 Hr | 90 | 77 | 28 | 28 | 3 | 1 | 1 | 228 | 134 | 72 | 29 | 73 | 2 | 1 | 0 | 311 | 15 | 7 | 0 | 8 | 0 | 0 | 1 | 31 | 570 |
| 12:00 | 27 | 16 | 9 | 5 | 1 | 0 | 0 | 58 | 28 | 18 | 7 | 18 | 1 | 0 | 0 | 72 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 10 | 140 |
| 12:15 | 42 | 24 | 3 | 10 | 2 | 0 | 0 | 81 | 34 | 18 | 8 | 14 | 1 | 0 | 1 | 76 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 168 |
| 12:30 | 45 | 19 | 8 | 5 | 2 | 0 | 0 | 79 | 34 | 15 | 7 | 13 | 0 | 0 | 0 | 69 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 7 | 155 |
| 12:45 | 37 | 11 | 10 | 6 | 0 | 0 | 0 | 64 | 46 | 21 | 5 | 14 | 1 | 0 | 0 | 87 | 9 | 3 | 1 | 0 | 0 | 0 | 0 | 13 | 164 |
| 1 Hr | 151 | 70 | 30 | 26 | 5 | 0 | 0 | 282 | 142 | 72 | 27 | 59 | 3 | 0 | 1 | 304 | 29 | 7 | 1 | 4 | 0 | 0 | 0 | 41 | 627 |
| 13:00 | 37 | 19 | 11 | 7 | 1 | 0 | 0 | 75 | 44 | 15 | 3 | 13 | 1 | 0 | 0 | 76 | 11 | 2 | 1 | 6 | 0 | 0 | 0 | 20 | 171 |
| 13:15 | 41 | 18 | 4 | 4 | 2 | 0 | 0 | 69 | 46 | 16 | 1 | 17 | 2 | 1 | 0 | 83 | 6 | 2 | 0 | 5 | 0 | 0 | 0 | 13 | 165 |
| 13:30 | 43 | 11 | 9 | 6 | 0 | 0 | 0 | 69 | 37 | 23 | 5 | 16 | 1 | 1 | 0 | 83 | 2 | 2 | 0 | 5 | 0 | 0 | 0 | 9 | 161 |
| 13:45 | 44 | 21 | 7 | 10 | 2 | 0 | 0 | 84 | 47 | 18 | 9 | 13 | 0 | 0 | 1 | 88 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 181 |
| 1 Hr | 165 | 69 | 31 | 27 | 5 | 0 | 0 | 297 | 174 | 72 | 18 | 59 | 4 | 2 | 1 | 330 | 26 | 7 | 1 | 17 | 0 | 0 | 0 | 51 | 678 |
| 14:00 | 28 | 16 | 5 | 9 | 1 | 1 | 0 | 60 | 46 | 17 | 7 | 18 | 1 | 0 | 0 | 89 | 5 | 2 | 0 | 4 | 0 | 0 | 0 | 11 | 160 |
| 14:15 | 33 | 20 | 8 | 4 | 1 | 0 | 0 | 66 | 41 | 17 | 4 | 12 | 2 | 1 | 0 | 77 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 10 | 153 |
| 14:30 | 29 | 10 | 4 | 10 | 1 | 0 | 0 | 54 | 38 | 20 | 6 | 13 | 1 | 0 | 0 | 78 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 135 |
| 14:45 | 39 | 22 | 11 | 9 | 1 | 1 | 0 | 83 | 42 | 18 | 10 | 14 | 0 | 0 | 0 | 84 | 6 | 3 | 0 | 6 | 0 | 0 | 0 | 15 | 182 |
| 1 Hr | 129 | 68 | 28 | 32 | 4 | 2 | 0 | 263 | 167 | 72 | 27 | 57 | 4 | 1 | 0 | 328 | 20 | 7 | 1 | 11 | 0 | 0 | 0 | 39 | 630 |
| 15:00 | 27 | 11 | 9 | 8 | 1 | 0 | 0 | 56 | 45 | 13 | 5 | 15 | 2 | 2 | 0 | 82 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 5 | 143 |
| 15:15 | 39 | 18 | 8 | 13 | 2 | 0 | 0 | 80 | 50 | 11 | 8 | 12 | 0 | 0 | 0 | 81 | 7 | 0 | 0 | 5 | 0 | 0 | 0 | 12 | 173 |
| 15:30 | 40 | 26 | 8 | 9 | 2 | 0 | 0 | 85 | 59 | 16 | 2 | 16 | 1 | 0 | 0 | 94 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 6 | 185 |
| 15:45 | 29 | 20 | 9 | 6 | 1 | 1 | 2 | 68 | 53 | 26 | 6 | 18 | 1 | 0 | 0 | 104 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 177 |
| 1 Hr | 135 | 75 | 34 | 36 | 6 | 1 | 2 | 289 | 207 | 66 | 21 | 61 | 4 | 2 | 0 | 361 | 12 | 3 | 1 | 12 | 0 | 0 | 0 | 28 | 678 |
| 16:00 | 24 | 27 | 8 | 12 | 1 | 0 | 1 | 73 | 59 | 32 | 6 | 11 | 2 | 0 | 0 | 110 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 7 | 190 |
| 16:15 | 37 | 13 | 5 | 8 | 1 | 0 | 0 | 64 | 50 | 22 | 10 | 8 | 0 | 0 | 0 | 90 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 159 |
| 16:30 | 35 | 14 | 3 | 14 | 0 | 2 | 1 | 69 | 63 | 24 | 1 | 5 | 1 | 3 | 0 | 97 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 168 |
| 16:45 | 52 | 15 | 7 | 10 | 2 | 0 | 0 | 86 | 69 | 20 | 7 | 7 | 0 | 1 | 0 | 104 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 7 | 197 |
| 1 Hr | 148 | 69 | 23 | 44 | 4 | 2 | 2 | 292 | 241 | 98 | 24 | 31 | 3 | 4 | 0 | 401 | 6 | 2 | 2 | 11 | 0 | 0 | 0 | 21 | 714 |
| 17:00 | 61 | 19 | 9 | 7 | 1 | 1 | 1 | 99 | 93 | 20 | 5 | 4 | 1 | 2 | 0 | 125 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 5 | 229 |
| 17:15 | 50 | 12 | 2 | 7 | 2 | 2 | 1 | 76 | 86 | 18 | 3 | 4 | 1 | 1 | 0 | 113 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 6 | 195 |
| 17:30 | 62 | 11 | 7 | 4 | 1 | 0 | 3 | 88 | 83 | 17 | 5 | 6 | 1 | 2 | 1 | 115 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 5 | 208 |
| 17:45 | 46 | 6 | 7 | 4 | 2 | 1 | 1 | 67 | 89 | 19 | 3 | 6 | 0 | 0 | 0 | 117 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 188 |
| 1 Hr | 219 | 48 | 25 | 22 | 6 | 4 | 6 | 330 | 351 | 74 | 16 | 20 | 3 | 5 | 1 | 470 | 9 | 3 | 0 | 6 | 0 | 0 | 2 | 20 | 820 |
| 18:00 | 35 | 5 | 4 | 2 | 2 | 1 | 4 | 53 | 79 | 13 | 2 | 1 | 1 | 1 | 0 | 97 | 2 | 0 | 0 | 5 | 1 | 0 | 1 | 9 | 159 |
| 18:15 | 35 | 8 | 3 | 6 | 2 | 1 | 0 | 55 | 46 | 12 | 1 | 4 | 1 | 0 | 0 | 64 | 1 | 0 | 2 | 3 | 0 | 0 | 1 | 7 | 126 |
| 18:30 | 28 | 7 | 3 | 3 | 1 | 1 | 1 | 44 | 46 | 9 | 1 | 1 | 0 | 1 | 0 | 58 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 104 |
| 18:45 | 17 | 6 | 3 | 0 | 1 | 1 | 1 | 29 | 38 | 9 | 0 | 1 | 2 | 0 | 0 | 50 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 80 |
| 1 Hr | 115 | 26 | 13 | 11 | 6 | 4 | 6 | 181 | 209 | 43 | 4 | 7 | 4 | 2 | 0 | 269 | 5 | 1 | 2 | 8 | 1 | 0 | 2 | 19 | 469 |
| 12 Hrs | 1781 | 797 | 304 | 338 | 59 | 20 | 18 | 3317 | 2238 | 885 | 280 | 610 | 44 | 21 | 7 | 4085 | 203 | 73 | 11 | 121 | 2 | 0 | 15 | 425 | 7827 |
| Check | | | | | | | | 3317 | | | | | | | | 4085 | | | | | | | | 425 | 7827 |
| Total | 1781 | 797 | 304 | 338 | 59 | 20 | 18 | 3317 | 2238 | 885 | 280 | 610 | 44 | 21 | 7 | 4085 | 203 | 73 | 11 | 121 | 2 | 0 | 15 | 425 | 7827 |
| Check | | | | | | | | 3317 | | | | | | | | 4085 | | | | | | | | 425 | 7827 |

Tracsis plc
Traffic and Data Services

| | |
|---|---|
| **Client:** | Roadplan Consulting |
| **Job No:** | 3082-IRE Huntstown Quarry |
| **Survey Date:** | 22/06/2016 |
| **Survey Method:** | Video Observation |
| **Weather AM:** | Cloudy |
| **Weather PM** | Cloudy |
| **Site No:** | Site 3 |
| **Road:** | R135 / N2 Offslip |

Entry: Arm A - R135 (N)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - N2 Offslip | | | | | | | | Destination: Arm C - R135 (S) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 6 | 6 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 2 | 1 | 0 | 0 | 9 | 9 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 3 | 1 | 2 | 0 | 0 | 2 | 23 | 23 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 16 | 16 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 12 | 1 | 5 | 1 | 0 | 4 | 54 | 54 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 1 | 0 | 0 | 3 | 11 | 11 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 8 | 8 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 5 | 5 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 4 | 0 | 1 | 0 | 8 | 8 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 6 | 1 | 11 | 0 | 1 | 4 | 32 | 32 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 5 | 5 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 0 | 0 | 1 | 7 | 7 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 8 | 0 | 0 | 0 | 14 | 14 |
| 09:45 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 5 | 6 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 5 | 1 | 15 | 0 | 0 | 1 | 31 | 32 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 7 | 7 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 2 | 0 | 0 | 1 | 9 | 9 |
| 10:30 | 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 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 7 | 0 | 0 | 0 | 9 | 9 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 0 | 11 | 0 | 0 | 1 | 28 | 28 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 10 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 7 | 7 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 6 | 6 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 7 | 0 | 6 | 0 | 0 | 0 | 25 | 26 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 9 | 9 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 6 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 9 | 9 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 7 | 1 | 6 | 0 | 0 | 0 | 31 | 31 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 1 | 5 | 0 | 0 | 0 | 14 | 14 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 5 | 0 | 0 | 0 | 11 | 11 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 0 | 0 | 0 | 12 | 12 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 6 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | 1 | 17 | 0 | 0 | 0 | 43 | 43 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 4 | 0 | 0 | 0 | 9 | 9 |
| 14:15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 6 | 7 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 5 | 0 | 1 | 0 | 10 | 10 |
| 1 Hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 5 | 1 | 10 | 0 | 1 | 0 | 27 | 28 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 7 | 7 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 5 | 0 | 0 | 0 | 9 | 9 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 4 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 3 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 1 | 13 | 0 | 0 | 0 | 23 | 23 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 7 | 7 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 4 | 4 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 3 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 5 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 | 11 | 0 | 0 | 0 | 19 | 19 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 4 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 6 | 6 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 5 | 5 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 3 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 0 | 6 | 0 | 0 | 2 | 18 | 18 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 1 | 0 | 1 | 9 | 9 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 1 | 7 | 7 |
| 18:30 | 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 |
| 18:45 | 0 | 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 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 8 | 1 | 0 | 2 | 17 | 17 |
| 12 Hrs | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 62 | 11 | 119 | 2 | 2 | 14 | 348 | 351 |
| Check | | | | | | | | 3 | | | | | | | | 0 | | | | | | | | 348 | 351 |
| Total | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 62 | 11 | 119 | 2 | 2 | 14 | 348 | 351 |
| Check | | | | | | | | 3 | | | | | | | | 0 | | | | | | | | 348 | 351 |

Entry: Arm B - N2 Offslip

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - N2 Offslip | | | | | | | | Destination: Arm C - R135 (S) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 36 | 22 | 5 | 2 | 0 | 0 | 0 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 4 | 0 | 0 | 0 | 12 | 77 |
| 07:15 | 36 | 22 | 6 | 2 | 1 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 3 | 1 | 6 | 0 | 0 | 0 | 22 | 89 |
| 07:30 | 44 | 23 | 7 | 10 | 2 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 7 | 0 | 10 | 0 | 0 | 0 | 35 | 121 |
| 07:45 | 84 | 28 | 2 | 1 | 1 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 10 | 0 | 10 | 0 | 2 | 0 | 49 | 165 |
| 1 Hr | 200 | 95 | 20 | 15 | 4 | 0 | 0 | 334 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 20 | 2 | 30 | 0 | 2 | 0 | 118 | 452 |
| 08:00 | 53 | 16 | 6 | 4 | 0 | 0 | 0 | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 3 | 0 | 10 | 0 | 1 | 0 | 24 | 103 |
| 08:15 | 85 | 25 | 2 | 2 | 1 | 0 | 0 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 12 | 0 | 1 | 0 | 20 | 135 |
| 08:30 | 72 | 18 | 2 | 3 | 0 | 1 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 13 | 0 | 0 | 0 | 21 | 117 |
| 08:45 | 78 | 15 | 10 | 6 | 2 | 1 | 0 | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 8 | 0 | 0 | 0 | 11 | 123 |
| 1 Hr | 288 | 74 | 20 | 15 | 3 | 2 | 0 | 402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 8 | 0 | 43 | 0 | 2 | 0 | 76 | 478 |
| 09:00 | 65 | 14 | 8 | 7 | 1 | 0 | 0 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 12 | 0 | 0 | 0 | 16 | 111 |
| 09:15 | 54 | 16 | 5 | 5 | 2 | 1 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 1 | 15 | 0 | 1 | 0 | 26 | 109 |
| 09:30 | 37 | 20 | 3 | 6 | 3 | 0 | 0 | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 14 | 0 | 0 | 0 | 23 | 92 |
| 09:45 | 25 | 19 | 6 | 3 | 0 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 12 | 0 | 0 | 0 | 16 | 69 |
| 1 Hr | 181 | 69 | 22 | 21 | 6 | 1 | 0 | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 9 | 2 | 53 | 0 | 1 | 0 | 81 | 381 |
| 10:00 | 33 | 17 | 10 | 7 | 1 | 1 | 0 | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 3 | 8 | 0 | 0 | 0 | 17 | 86 |
| 10:15 | 30 | 12 | 6 | 3 | 3 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 17 | 0 | 0 | 0 | 23 | 77 |
| 10:30 | 24 | 23 | 4 | 1 | 1 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 12 | 65 |
| 10:45 | 33 | 17 | 4 | 5 | 1 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 12 | 0 | 0 | 0 | 20 | 80 |
| 1 Hr | 120 | 69 | 24 | 16 | 6 | 1 | 0 | 236 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 4 | 6 | 47 | 0 | 0 | 0 | 72 | 308 |
| 11:00 | 31 | 16 | 8 | 2 | 1 | 1 | 0 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 10 | 0 | 0 | 0 | 13 | 72 |
| 11:15 | 19 | 22 | 10 | 6 | 0 | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 7 | 0 | 0 | 0 | 12 | 69 |
| 11:30 | 21 | 17 | 5 | 6 | 1 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 0 | 20 | 0 | 0 | 0 | 29 | 79 |
| 11:45 | 25 | 15 | 6 | 6 | 1 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 15 | 0 | 0 | 0 | 22 | 75 |
| 1 Hr | 96 | 70 | 29 | 20 | 3 | 1 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 5 | 3 | 52 | 0 | 0 | 0 | 76 | 295 |
| 12:00 | 25 | 14 | 9 | 2 | 1 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 7 | 0 | 0 | 0 | 16 | 67 |
| 12:15 | 41 | 26 | 3 | 5 | 2 | 0 | 0 | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 2 | 9 | 0 | 0 | 0 | 17 | 94 |
| 12:30 | 32 | 14 | 9 | 5 | 2 | 0 | 0 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 3 | 10 | 0 | 0 | 0 | 25 | 87 |
| 12:45 | 37 | 12 | 10 | 5 | 0 | 0 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 0 | 12 | 0 | 0 | 0 | 21 | 85 |
| 1 Hr | 135 | 66 | 31 | 17 | 5 | 0 | 0 | 254 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 5 | 5 | 38 | 0 | 0 | 0 | 79 | 333 |
| 13:00 | 32 | 23 | 7 | 8 | 1 | 0 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 9 | 0 | 0 | 0 | 12 | 83 |
| 13:15 | 30 | 15 | 5 | 3 | 2 | 0 | 0 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 9 | 0 | 0 | 0 | 17 | 72 |
| 13:30 | 31 | 19 | 6 | 4 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 11 | 0 | 0 | 0 | 16 | 76 |
| 13:45 | 48 | 21 | 9 | 3 | 2 | 0 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 11 | 0 | 0 | 0 | 16 | 99 |
| 1 Hr | 141 | 78 | 27 | 18 | 5 | 0 | 0 | 269 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 3 | 2 | 40 | 0 | 0 | 0 | 61 | 330 |
| 14:00 | 37 | 14 | 3 | 7 | 1 | 1 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 1 | 11 | 0 | 0 | 0 | 21 | 84 |
| 14:15 | 26 | 18 | 8 | 3 | 1 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 10 | 0 | 0 | 0 | 18 | 74 |
| 14:30 | 31 | 14 | 4 | 4 | 1 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 13 | 0 | 1 | 0 | 17 | 71 |
| 14:45 | 34 | 25 | 10 | 3 | 1 | 1 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 1 | 9 | 0 | 0 | 0 | 17 | 91 |
| 1 Hr | 128 | 71 | 25 | 17 | 4 | 2 | 0 | 247 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 3 | 3 | 43 | 0 | 1 | 0 | 73 | 320 |
| 15:00 | 29 | 13 | 9 | 6 | 1 | 1 | 0 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 12 | 0 | 0 | 0 | 16 | 75 |
| 15:15 | 42 | 19 | 6 | 6 | 1 | 0 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 13 | 0 | 0 | 0 | 22 | 96 |
| 15:30 | 41 | 28 | 9 | 5 | 2 | 0 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 13 | 0 | 0 | 0 | 20 | 105 |
| 15:45 | 34 | 24 | 9 | 3 | 1 | 1 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 10 | 0 | 0 | 0 | 14 | 86 |
| 1 Hr | 146 | 84 | 33 | 20 | 5 | 2 | 0 | 290 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 2 | 48 | 0 | 0 | 0 | 72 | 362 |
| 16:00 | 21 | 27 | 7 | 3 | 1 | 0 | 0 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 7 | 0 | 0 | 0 | 9 | 68 |
| 16:15 | 31 | 20 | 7 | 8 | 1 | 1 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 6 | 74 |
| 16:30 | 32 | 15 | 4 | 5 | 0 | 1 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 6 | 0 | 0 | 0 | 13 | 70 |
| 16:45 | 47 | 13 | 8 | 9 | 2 | 0 | 0 | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 0 | 9 | 88 |
| 1 Hr | 131 | 75 | 26 | 25 | 4 | 2 | 0 | 263 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 4 | 1 | 21 | 0 | 1 | 0 | 37 | 300 |
| 17:00 | 54 | 19 | 10 | 4 | 1 | 1 | 0 | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 94 |
| 17:15 | 37 | 17 | 5 | 3 | 2 | 2 | 0 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 5 | 71 |
| 17:30 | 42 | 16 | 9 | 6 | 1 | 0 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 75 |
| 17:45 | 32 | 14 | 7 | 5 | 2 | 1 | 1 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 67 |
| 1 Hr | 165 | 66 | 31 | 18 | 6 | 4 | 1 | 291 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 1 | 6 | 0 | 0 | 0 | 16 | 307 |
| 18:00 | 28 | 12 | 5 | 3 | 1 | 1 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 7 | 57 |
| 18:15 | 21 | 9 | 3 | 6 | 2 | 1 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 45 |
| 18:30 | 23 | 5 | 4 | 3 | 2 | 1 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 43 |
| 18:45 | 19 | 9 | 2 | 1 | 0 | 1 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 34 |
| 1 Hr | 91 | 35 | 14 | 13 | 5 | 4 | 0 | 162 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 8 | 0 | 0 | 0 | 17 | 179 |
| 12 Hrs | 1822 | 852 | 302 | 215 | 56 | 19 | 1 | 3267 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 247 | 68 | 27 | 429 | 0 | 7 | 0 | 778 | 4045 |
| Check | | | | | | | | 3267 | | | | | | | | 0 | | | | | | | | 778 | 4045 |
| Total | 1822 | 852 | 302 | 215 | 56 | 19 | 1 | 3267 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 247 | 68 | 27 | 429 | 0 | 7 | 0 | 778 | 4045 |
| Check | | | | | | | | 3267 | | | | | | | | 0 | | | | | | | | 778 | 4045 |

Entry: Arm C - R135 (S)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - N2 Offslip | | | | | | | | Destination: Arm C - R135 (S) | | | | | | | | Arm Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | |
| 07:00 | 1 | 1 | 0 | 4 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 07:15 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 07:30 | 1 | 1 | 1 | 11 | 1 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 07:45 | 2 | 3 | 0 | 14 | 0 | 2 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 1 Hr | 5 | 5 | 1 | 40 | 1 | 2 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 08:00 | 2 | 2 | 1 | 26 | 0 | 0 | 1 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 08:15 | 4 | 1 | 1 | 10 | 0 | 2 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 08:30 | 7 | 3 | 0 | 7 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 08:45 | 5 | 1 | 1 | 21 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 1 Hr | 18 | 7 | 3 | 64 | 0 | 2 | 1 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 09:00 | 3 | 1 | 0 | 11 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 09:15 | 3 | 3 | 2 | 13 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 09:30 | 3 | 4 | 0 | 22 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 09:45 | 5 | 8 | 1 | 15 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 1 Hr | 14 | 16 | 3 | 61 | 0 | 0 | 0 | 94 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 10:00 | 8 | 5 | 1 | 15 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 10:15 | 4 | 2 | 1 | 11 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 10:30 | 7 | 4 | 0 | 10 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 10:45 | 5 | 2 | 0 | 15 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 1 Hr | 24 | 13 | 2 | 51 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 11:00 | 9 | 1 | 2 | 17 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 11:15 | 6 | 4 | 3 | 14 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 11:30 | 3 | 2 | 1 | 14 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 11:45 | 7 | 3 | 1 | 19 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 1 Hr | 25 | 10 | 7 | 64 | 0 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 12:00 | 12 | 7 | 1 | 13 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 12:15 | 15 | 0 | 1 | 21 | 0 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 12:30 | 8 | 6 | 0 | 5 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 12:45 | 18 | 2 | 2 | 9 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 1 Hr | 53 | 15 | 4 | 48 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 |
| 13:00 | 19 | 3 | 1 | 11 | 0 | 0 | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 13:15 | 20 | 6 | 1 | 14 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 13:30 | 10 | 0 | 2 | 11 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 13:45 | 12 | 2 | 1 | 16 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 1 Hr | 61 | 11 | 5 | 52 | 0 | 0 | 1 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |
| 14:00 | 12 | 1 | 1 | 17 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 14:15 | 6 | 4 | 1 | 10 | 0 | 1 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 14:30 | 7 | 0 | 0 | 14 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 14:45 | 11 | 3 | 2 | 13 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 1 Hr | 36 | 8 | 4 | 54 | 0 | 1 | 0 | 103 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| 15:00 | 15 | 0 | 2 | 14 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 15:15 | 24 | 1 | 1 | 16 | 0 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 15:30 | 21 | 2 | 0 | 15 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 15:45 | 12 | 7 | 2 | 13 | 0 | 0 | 2 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 1 Hr | 72 | 10 | 5 | 58 | 0 | 0 | 2 | 147 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 147 |
| 16:00 | 13 | 8 | 1 | 17 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 16:15 | 15 | 6 | 3 | 10 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 16:30 | 15 | 3 | 0 | 9 | 0 | 0 | 1 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 16:45 | 24 | 8 | 1 | 4 | 0 | 1 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 1 Hr | 67 | 25 | 5 | 40 | 0 | 1 | 1 | 139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 17:00 | 26 | 5 | 2 | 4 | 0 | 2 | 1 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 17:15 | 8 | 5 | 0 | 4 | 0 | 0 | 2 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 17:30 | 13 | 3 | 0 | 2 | 0 | 0 | 1 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 17:45 | 14 | 2 | 0 | 1 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 |
| 1 Hr | 61 | 15 | 2 | 11 | 0 | 2 | 4 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 96 |
| 18:00 | 21 | 2 | 0 | 1 | 1 | 0 | 2 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 18:15 | 19 | 3 | 0 | 2 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 18:30 | 15 | 2 | 0 | 1 | 0 | 0 | 1 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 18:45 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 1 Hr | 62 | 8 | 0 | 4 | 1 | 0 | 4 | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 12 Hrs | 498 | 143 | 41 | 547 | 2 | 8 | 13 | 1252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1253 |
| Check | | | | | | | | 1252 | | | | | | | | 0 | | | | | | | | 1 | 1253 |
| Total | 498 | 143 | 41 | 547 | 2 | 8 | 13 | 1252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1253 |
| Check | | | | | | | | 1252 | | | | | | | | 0 | | | | | | | | 1 | 1253 |

ORIGIN SUMMARY

| | Origin: Arm A - R135 (N) | | | | | | | | Origin: Arm B - N2 Offslip | | | | | | | | Origin: Arm C - R135 (S) | | | | | | | | Origin Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | |
| 07:00 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 6 | 43 | 22 | 6 | 6 | 0 | 0 | 0 | 77 | 1 | 1 | 0 | 4 | 0 | 0 | 0 | 6 | 89 |
| 07:15 | 5 | 1 | 0 | 2 | 1 | 0 | 0 | 9 | 48 | 25 | 7 | 8 | 1 | 0 | 0 | 89 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 12 | 110 |
| 07:30 | 15 | 3 | 1 | 2 | 0 | 0 | 2 | 23 | 62 | 30 | 7 | 20 | 2 | 0 | 0 | 121 | 1 | 1 | 1 | 11 | 1 | 0 | 0 | 15 | 159 |
| 07:45 | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 16 | 111 | 38 | 2 | 11 | 1 | 2 | 0 | 165 | 2 | 3 | 0 | 14 | 0 | 2 | 0 | 21 | 202 |
| 1 Hr | 31 | 12 | 1 | 5 | 1 | 0 | 4 | 54 | 264 | 115 | 22 | 45 | 4 | 2 | 0 | 452 | 5 | 5 | 1 | 40 | 1 | 2 | 0 | 54 | 560 |
| 08:00 | 4 | 3 | 0 | 1 | 0 | 0 | 3 | 11 | 63 | 19 | 6 | 14 | 0 | 1 | 0 | 103 | 2 | 2 | 1 | 26 | 0 | 0 | 1 | 32 | 146 |
| 08:15 | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 8 | 89 | 28 | 2 | 14 | 1 | 1 | 0 | 135 | 4 | 1 | 1 | 10 | 0 | 2 | 0 | 18 | 161 |
| 08:30 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 5 | 79 | 19 | 2 | 16 | 0 | 1 | 0 | 117 | 7 | 3 | 0 | 7 | 0 | 0 | 0 | 17 | 139 |
| 08:45 | 1 | 1 | 1 | 4 | 0 | 1 | 0 | 8 | 80 | 16 | 10 | 14 | 2 | 1 | 0 | 123 | 5 | 1 | 1 | 21 | 0 | 0 | 0 | 28 | 159 |
| 1 Hr | 9 | 6 | 1 | 11 | 0 | 1 | 4 | 32 | 311 | 82 | 20 | 58 | 3 | 4 | 0 | 478 | 18 | 7 | 3 | 64 | 0 | 2 | 1 | 95 | 605 |
| 09:00 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 5 | 69 | 14 | 8 | 19 | 1 | 0 | 0 | 111 | 3 | 1 | 0 | 11 | 0 | 0 | 0 | 15 | 131 |
| 09:15 | 2 | 2 | 0 | 2 | 0 | 0 | 1 | 7 | 60 | 19 | 6 | 20 | 2 | 2 | 0 | 109 | 3 | 3 | 2 | 13 | 0 | 0 | 0 | 21 | 137 |
| 09:30 | 5 | 1 | 0 | 8 | 0 | 0 | 0 | 14 | 41 | 24 | 4 | 20 | 3 | 0 | 0 | 92 | 3 | 4 | 0 | 22 | 0 | 0 | 0 | 29 | 135 |
| 09:45 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 6 | 27 | 21 | 6 | 15 | 0 | 0 | 0 | 69 | 5 | 8 | 1 | 15 | 0 | 0 | 0 | 29 | 104 |
| 1 Hr | 10 | 5 | 1 | 15 | 0 | 0 | 1 | 32 | 197 | 78 | 24 | 74 | 6 | 2 | 0 | 381 | 14 | 16 | 3 | 61 | 0 | 0 | 0 | 94 | 507 |
| 10:00 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 7 | 37 | 19 | 13 | 15 | 1 | 1 | 0 | 86 | 8 | 5 | 1 | 15 | 0 | 0 | 0 | 29 | 122 |
| 10:15 | 3 | 3 | 0 | 2 | 0 | 0 | 1 | 9 | 34 | 14 | 6 | 20 | 3 | 0 | 0 | 77 | 4 | 2 | 1 | 11 | 0 | 0 | 0 | 18 | 104 |
| 10:30 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 24 | 23 | 6 | 11 | 1 | 0 | 0 | 65 | 7 | 4 | 0 | 10 | 0 | 0 | 0 | 21 | 89 |
| 10:45 | 2 | 0 | 0 | 7 | 0 | 0 | 0 | 9 | 40 | 17 | 5 | 17 | 1 | 0 | 0 | 80 | 5 | 2 | 0 | 15 | 0 | 0 | 0 | 22 | 111 |
| 1 Hr | 10 | 6 | 0 | 11 | 0 | 0 | 1 | 28 | 135 | 73 | 30 | 63 | 6 | 1 | 0 | 308 | 24 | 13 | 2 | 51 | 0 | 0 | 0 | 90 | 426 |
| 11:00 | 5 | 3 | 0 | 1 | 0 | 0 | 1 | 10 | 32 | 17 | 9 | 12 | 1 | 1 | 0 | 72 | 9 | 1 | 2 | 17 | 0 | 0 | 0 | 29 | 111 |
| 11:15 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 7 | 22 | 22 | 12 | 13 | 0 | 0 | 0 | 69 | 6 | 4 | 3 | 14 | 0 | 0 | 0 | 27 | 103 |
| 11:30 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 27 | 20 | 5 | 26 | 1 | 0 | 0 | 79 | 3 | 2 | 1 | 14 | 0 | 0 | 0 | 20 | 102 |
| 11:45 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 6 | 31 | 16 | 6 | 21 | 1 | 0 | 0 | 75 | 7 | 3 | 1 | 19 | 0 | 0 | 0 | 30 | 111 |
| 1 Hr | 12 | 7 | 0 | 6 | 0 | 0 | 1 | 26 | 112 | 75 | 32 | 72 | 3 | 1 | 0 | 295 | 25 | 10 | 7 | 64 | 0 | 0 | 0 | 106 | 427 |
| 12:00 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 9 | 33 | 15 | 9 | 9 | 1 | 0 | 0 | 67 | 12 | 7 | 1 | 13 | 0 | 0 | 0 | 33 | 109 |
| 12:15 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 46 | 27 | 5 | 14 | 2 | 0 | 0 | 94 | 15 | 0 | 1 | 21 | 0 | 0 | 0 | 37 | 138 |
| 12:30 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 44 | 14 | 12 | 15 | 2 | 0 | 0 | 87 | 8 | 6 | 0 | 5 | 0 | 0 | 0 | 19 | 112 |
| 12:45 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 9 | 43 | 15 | 10 | 17 | 0 | 0 | 0 | 85 | 18 | 2 | 2 | 9 | 0 | 0 | 0 | 31 | 125 |
| 1 Hr | 17 | 7 | 1 | 6 | 0 | 0 | 0 | 31 | 166 | 71 | 36 | 55 | 5 | 0 | 0 | 333 | 53 | 15 | 4 | 48 | 0 | 0 | 0 | 120 | 484 |
| 13:00 | 7 | 1 | 1 | 5 | 0 | 0 | 0 | 14 | 33 | 25 | 7 | 17 | 1 | 0 | 0 | 83 | 19 | 3 | 1 | 11 | 0 | 0 | 1 | 35 | 132 |
| 13:15 | 5 | 1 | 0 | 5 | 0 | 0 | 0 | 11 | 37 | 15 | 6 | 12 | 2 | 0 | 0 | 72 | 20 | 6 | 1 | 14 | 0 | 0 | 0 | 41 | 124 |
| 13:30 | 3 | 3 | 0 | 6 | 0 | 0 | 0 | 12 | 35 | 19 | 7 | 15 | 0 | 0 | 0 | 76 | 10 | 0 | 2 | 11 | 0 | 0 | 0 | 23 | 111 |
| 13:45 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 52 | 22 | 9 | 14 | 2 | 0 | 0 | 99 | 12 | 2 | 1 | 16 | 0 | 0 | 0 | 31 | 136 |
| 1 Hr | 19 | 6 | 1 | 17 | 0 | 0 | 0 | 43 | 157 | 81 | 29 | 58 | 5 | 0 | 0 | 330 | 61 | 11 | 5 | 52 | 0 | 0 | 1 | 130 | 503 |
| 14:00 | 3 | 2 | 0 | 4 | 0 | 0 | 0 | 9 | 45 | 15 | 4 | 18 | 1 | 1 | 0 | 84 | 12 | 1 | 1 | 17 | 0 | 0 | 0 | 31 | 124 |
| 14:15 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 7 | 33 | 19 | 8 | 13 | 1 | 0 | 0 | 74 | 6 | 4 | 1 | 10 | 0 | 1 | 0 | 22 | 103 |
| 14:30 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 33 | 14 | 5 | 17 | 1 | 1 | 0 | 71 | 7 | 0 | 0 | 14 | 0 | 0 | 0 | 21 | 94 |
| 14:45 | 2 | 2 | 0 | 5 | 0 | 1 | 0 | 10 | 40 | 26 | 11 | 12 | 1 | 1 | 0 | 91 | 11 | 3 | 2 | 13 | 0 | 0 | 0 | 29 | 130 |
| 1 Hr | 11 | 5 | 1 | 10 | 0 | 1 | 0 | 28 | 151 | 74 | 28 | 60 | 4 | 3 | 0 | 320 | 36 | 8 | 4 | 54 | 0 | 1 | 0 | 103 | 451 |
| 15:00 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 7 | 32 | 14 | 9 | 18 | 1 | 1 | 0 | 75 | 15 | 0 | 2 | 14 | 0 | 0 | 0 | 31 | 113 |
| 15:15 | 3 | 1 | 0 | 5 | 0 | 0 | 0 | 9 | 50 | 19 | 7 | 19 | 1 | 0 | 0 | 96 | 24 | 1 | 1 | 16 | 0 | 0 | 0 | 42 | 147 |
| 15:30 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 47 | 29 | 9 | 18 | 2 | 0 | 0 | 105 | 21 | 2 | 0 | 15 | 0 | 0 | 0 | 38 | 147 |
| 15:45 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 36 | 25 | 10 | 13 | 1 | 1 | 0 | 86 | 12 | 7 | 2 | 13 | 0 | 0 | 2 | 36 | 125 |
| 1 Hr | 6 | 3 | 1 | 13 | 0 | 0 | 0 | 23 | 165 | 87 | 35 | 68 | 5 | 2 | 0 | 362 | 72 | 10 | 5 | 58 | 0 | 0 | 2 | 147 | 532 |
| 16:00 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 7 | 22 | 28 | 7 | 10 | 1 | 0 | 0 | 68 | 13 | 8 | 1 | 17 | 0 | 0 | 0 | 39 | 114 |
| 16:15 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 4 | 34 | 21 | 7 | 10 | 1 | 1 | 0 | 74 | 15 | 6 | 3 | 10 | 0 | 0 | 0 | 34 | 112 |
| 16:30 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 37 | 16 | 5 | 11 | 0 | 1 | 0 | 70 | 15 | 3 | 0 | 9 | 0 | 0 | 1 | 28 | 101 |
| 16:45 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 48 | 14 | 8 | 15 | 2 | 1 | 0 | 88 | 24 | 8 | 1 | 4 | 0 | 1 | 0 | 38 | 131 |
| 1 Hr | 4 | 2 | 2 | 11 | 0 | 0 | 0 | 19 | 141 | 79 | 27 | 46 | 4 | 3 | 0 | 300 | 67 | 25 | 5 | 40 | 0 | 1 | 1 | 139 | 458 |
| 17:00 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 56 | 20 | 11 | 5 | 1 | 1 | 0 | 94 | 26 | 5 | 2 | 4 | 0 | 2 | 1 | 40 | 138 |
| 17:15 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 6 | 37 | 20 | 5 | 5 | 2 | 2 | 0 | 71 | 8 | 5 | 0 | 4 | 0 | 0 | 2 | 19 | 96 |
| 17:30 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 5 | 43 | 16 | 9 | 6 | 1 | 0 | 0 | 75 | 13 | 3 | 0 | 2 | 0 | 0 | 1 | 19 | 99 |
| 17:45 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 34 | 14 | 7 | 8 | 2 | 1 | 1 | 67 | 15 | 2 | 0 | 1 | 0 | 0 | 0 | 18 | 88 |
| 1 Hr | 7 | 3 | 0 | 6 | 0 | 0 | 2 | 18 | 170 | 70 | 32 | 24 | 6 | 4 | 1 | 307 | 62 | 15 | 2 | 11 | 0 | 2 | 4 | 96 | 421 |
| 18:00 | 2 | 0 | 0 | 5 | 1 | 0 | 1 | 9 | 32 | 12 | 5 | 6 | 1 | 1 | 0 | 57 | 21 | 2 | 0 | 1 | 1 | 0 | 2 | 27 | 93 |
| 18:15 | 1 | 0 | 2 | 3 | 0 | 0 | 1 | 7 | 22 | 9 | 3 | 8 | 2 | 1 | 0 | 45 | 19 | 3 | 0 | 2 | 0 | 0 | 0 | 24 | 76 |
| 18:30 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 26 | 5 | 4 | 5 | 2 | 1 | 0 | 43 | 15 | 2 | 0 | 1 | 0 | 0 | 1 | 19 | 63 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 9 | 2 | 2 | 0 | 1 | 0 | 34 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 9 | 43 |
| 1 Hr | 4 | 0 | 2 | 8 | 1 | 0 | 2 | 17 | 100 | 35 | 14 | 21 | 5 | 4 | 0 | 179 | 62 | 8 | 0 | 4 | 1 | 0 | 4 | 79 | 275 |
| 12 Hrs | 140 | 62 | 11 | 119 | 2 | 2 | 15 | 351 | 2069 | 920 | 329 | 644 | 56 | 26 | 1 | 4045 | 499 | 143 | 41 | 547 | 2 | 8 | 13 | 1253 | 5649 |
| Check | | | | | | | | 351 | | | | | | | | 4045 | | | | | | | | 1253 | 5649 |
| Total | 140 | 62 | 11 | 119 | 2 | 2 | 15 | 351 | 2069 | 920 | 329 | 644 | 56 | 26 | 1 | 4045 | 499 | 143 | 41 | 547 | 2 | 8 | 13 | 1253 | 5649 |
| Check | | | | | | | | 351 | | | | | | | | 4045 | | | | | | | | 1253 | 5649 |

DESTINATION SUMMARY

| | Destination: Arm A - R135 (N) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 37 | 23 | 5 | 6 | 0 | 0 | 0 | 71 |
| 07:15 | 37 | 22 | 6 | 13 | 1 | 0 | 0 | 79 |
| 07:30 | 45 | 24 | 8 | 21 | 3 | 0 | 0 | 101 |
| 07:45 | 86 | 31 | 2 | 15 | 1 | 2 | 0 | 137 |
| 1 Hr | 205 | 100 | 21 | 55 | 5 | 2 | 0 | 388 |
| 08:00 | 55 | 18 | 7 | 30 | 0 | 0 | 1 | 111 |
| 08:15 | 89 | 26 | 3 | 12 | 1 | 2 | 0 | 133 |
| 08:30 | 79 | 21 | 2 | 10 | 0 | 1 | 0 | 113 |
| 08:45 | 83 | 16 | 11 | 27 | 2 | 1 | 0 | 140 |
| 1 Hr | 306 | 81 | 23 | 79 | 3 | 4 | 1 | 497 |
| 09:00 | 68 | 15 | 8 | 18 | 1 | 0 | 0 | 110 |
| 09:15 | 57 | 19 | 7 | 18 | 2 | 1 | 0 | 104 |
| 09:30 | 40 | 24 | 3 | 28 | 3 | 0 | 0 | 98 |
| 09:45 | 31 | 27 | 7 | 18 | 0 | 0 | 0 | 83 |
| 1 Hr | 196 | 85 | 25 | 82 | 6 | 1 | 0 | 395 |
| 10:00 | 41 | 22 | 11 | 22 | 1 | 1 | 0 | 98 |
| 10:15 | 34 | 14 | 7 | 14 | 3 | 0 | 0 | 72 |
| 10:30 | 31 | 27 | 4 | 11 | 1 | 0 | 0 | 74 |
| 10:45 | 38 | 19 | 4 | 20 | 1 | 0 | 0 | 82 |
| 1 Hr | 144 | 82 | 26 | 67 | 6 | 1 | 0 | 326 |
| 11:00 | 40 | 17 | 10 | 19 | 1 | 1 | 1 | 89 |
| 11:15 | 25 | 26 | 13 | 20 | 0 | 0 | 0 | 84 |
| 11:30 | 24 | 19 | 6 | 20 | 1 | 0 | 0 | 70 |
| 11:45 | 32 | 18 | 7 | 25 | 1 | 0 | 0 | 83 |
| 1 Hr | 121 | 80 | 36 | 84 | 3 | 1 | 1 | 326 |
| 12:00 | 37 | 21 | 10 | 15 | 1 | 0 | 0 | 84 |
| 12:15 | 56 | 26 | 4 | 26 | 2 | 0 | 0 | 114 |
| 12:30 | 40 | 20 | 9 | 10 | 2 | 0 | 0 | 81 |
| 12:45 | 55 | 14 | 12 | 14 | 0 | 0 | 0 | 95 |
| 1 Hr | 188 | 81 | 35 | 65 | 5 | 0 | 0 | 374 |
| 13:00 | 51 | 26 | 8 | 19 | 1 | 0 | 1 | 106 |
| 13:15 | 50 | 21 | 6 | 17 | 2 | 0 | 0 | 96 |
| 13:30 | 41 | 19 | 8 | 15 | 0 | 0 | 0 | 83 |
| 13:45 | 60 | 23 | 10 | 19 | 2 | 0 | 0 | 114 |
| 1 Hr | 202 | 89 | 32 | 70 | 5 | 0 | 1 | 399 |
| 14:00 | 49 | 15 | 4 | 24 | 1 | 1 | 0 | 94 |
| 14:15 | 33 | 22 | 9 | 13 | 1 | 1 | 0 | 79 |
| 14:30 | 38 | 14 | 4 | 18 | 1 | 0 | 0 | 75 |
| 14:45 | 45 | 28 | 12 | 16 | 1 | 1 | 0 | 103 |
| 1 Hr | 165 | 79 | 29 | 71 | 4 | 3 | 0 | 351 |
| 15:00 | 44 | 13 | 11 | 20 | 1 | 1 | 0 | 90 |
| 15:15 | 66 | 20 | 7 | 22 | 1 | 0 | 0 | 116 |
| 15:30 | 62 | 30 | 9 | 20 | 2 | 0 | 0 | 123 |
| 15:45 | 46 | 31 | 11 | 16 | 1 | 1 | 2 | 108 |
| 1 Hr | 218 | 94 | 38 | 78 | 5 | 2 | 2 | 437 |
| 16:00 | 34 | 35 | 8 | 20 | 1 | 0 | 0 | 98 |
| 16:15 | 46 | 26 | 10 | 18 | 1 | 1 | 0 | 102 |
| 16:30 | 47 | 18 | 4 | 14 | 0 | 1 | 1 | 85 |
| 16:45 | 71 | 21 | 9 | 13 | 2 | 1 | 0 | 117 |
| 1 Hr | 198 | 100 | 31 | 65 | 4 | 3 | 1 | 402 |
| 17:00 | 80 | 24 | 12 | 8 | 1 | 3 | 1 | 129 |
| 17:15 | 45 | 22 | 5 | 7 | 2 | 2 | 2 | 85 |
| 17:30 | 55 | 19 | 9 | 8 | 1 | 0 | 1 | 93 |
| 17:45 | 46 | 16 | 7 | 6 | 2 | 1 | 1 | 79 |
| 1 Hr | 226 | 81 | 33 | 29 | 6 | 6 | 5 | 386 |
| 18:00 | 49 | 14 | 5 | 4 | 2 | 1 | 2 | 77 |
| 18:15 | 40 | 12 | 3 | 8 | 2 | 1 | 0 | 66 |
| 18:30 | 38 | 7 | 4 | 4 | 2 | 1 | 1 | 57 |
| 18:45 | 26 | 10 | 2 | 1 | 0 | 1 | 1 | 41 |
| 1 Hr | 153 | 43 | 14 | 17 | 6 | 4 | 4 | 241 |
| 12 Hrs | 2322 | 995 | 343 | 762 | 58 | 27 | 15 | 4522 |
| Check | | | | | | | | 4522 |
| Total | 2322 | 995 | 343 | 762 | 58 | 27 | 15 | 4522 |
| Check | | | | | | | | 4522 |

| | Destination: Arm B - N2 Offslip | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 Hrs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Check | | | | | | | | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Check | | | | | | | | 0 |

| | Destination: Arm C - R135 (S) | | | | | | | | Dest |
|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 9 | 1 | 1 | 5 | 0 | 0 | 2 | 18 | 89 |
| 07:15 | 17 | 4 | 1 | 8 | 1 | 0 | 0 | 31 | 110 |
| 07:30 | 33 | 10 | 1 | 12 | 0 | 0 | 2 | 58 | 159 |
| 07:45 | 36 | 17 | 0 | 10 | 0 | 2 | 0 | 65 | 202 |
| 1 Hr | 95 | 32 | 3 | 35 | 1 | 2 | 4 | 172 | 560 |
| 08:00 | 14 | 6 | 0 | 11 | 0 | 1 | 3 | 35 | 146 |
| 08:15 | 6 | 5 | 0 | 16 | 0 | 1 | 0 | 28 | 161 |
| 08:30 | 9 | 1 | 0 | 15 | 0 | 0 | 1 | 26 | 139 |
| 08:45 | 3 | 2 | 1 | 12 | 0 | 1 | 0 | 19 | 159 |
| 1 Hr | 32 | 14 | 1 | 54 | 0 | 3 | 4 | 108 | 605 |
| 09:00 | 4 | 1 | 1 | 15 | 0 | 0 | 0 | 21 | 131 |
| 09:15 | 8 | 5 | 1 | 17 | 0 | 1 | 1 | 33 | 137 |
| 09:30 | 9 | 5 | 1 | 22 | 0 | 0 | 0 | 37 | 135 |
| 09:45 | 4 | 3 | 0 | 14 | 0 | 0 | 0 | 21 | 104 |
| 1 Hr | 25 | 14 | 3 | 68 | 0 | 1 | 1 | 112 | 507 |
| 10:00 | 6 | 5 | 3 | 10 | 0 | 0 | 0 | 24 | 122 |
| 10:15 | 7 | 5 | 0 | 19 | 0 | 0 | 1 | 32 | 104 |
| 10:30 | 3 | 0 | 2 | 10 | 0 | 0 | 0 | 15 | 89 |
| 10:45 | 9 | 0 | 1 | 19 | 0 | 0 | 0 | 29 | 111 |
| 1 Hr | 25 | 10 | 6 | 58 | 0 | 0 | 1 | 100 | 426 |
| 11:00 | 6 | 4 | 1 | 11 | 0 | 0 | 0 | 22 | 111 |
| 11:15 | 5 | 2 | 2 | 10 | 0 | 0 | 0 | 19 | 103 |
| 11:30 | 8 | 4 | 0 | 20 | 0 | 0 | 0 | 32 | 102 |
| 11:45 | 9 | 2 | 0 | 17 | 0 | 0 | 0 | 28 | 111 |
| 1 Hr | 28 | 12 | 3 | 58 | 0 | 0 | 0 | 101 | 427 |
| 12:00 | 12 | 1 | 0 | 12 | 0 | 0 | 0 | 25 | 109 |
| 12:15 | 10 | 3 | 2 | 9 | 0 | 0 | 0 | 24 | 138 |
| 12:30 | 15 | 2 | 3 | 11 | 0 | 0 | 0 | 31 | 112 |
| 12:45 | 11 | 6 | 1 | 12 | 0 | 0 | 0 | 30 | 125 |
| 1 Hr | 48 | 12 | 6 | 44 | 0 | 0 | 0 | 110 | 484 |
| 13:00 | 8 | 3 | 1 | 14 | 0 | 0 | 0 | 26 | 132 |
| 13:15 | 12 | 1 | 1 | 14 | 0 | 0 | 0 | 28 | 124 |
| 13:30 | 7 | 3 | 1 | 17 | 0 | 0 | 0 | 28 | 111 |
| 13:45 | 8 | 2 | 0 | 12 | 0 | 0 | 0 | 22 | 136 |
| 1 Hr | 35 | 9 | 3 | 57 | 0 | 0 | 0 | 104 | 503 |
| 14:00 | 11 | 3 | 1 | 15 | 0 | 0 | 0 | 30 | 124 |
| 14:15 | 10 | 2 | 1 | 11 | 0 | 0 | 0 | 24 | 103 |
| 14:30 | 4 | 0 | 1 | 13 | 0 | 1 | 0 | 19 | 94 |
| 14:45 | 8 | 3 | 1 | 14 | 0 | 1 | 0 | 27 | 130 |
| 1 Hr | 33 | 8 | 4 | 53 | 0 | 2 | 0 | 100 | 451 |
| 15:00 | 5 | 1 | 0 | 17 | 0 | 0 | 0 | 23 | 113 |
| 15:15 | 11 | 1 | 1 | 18 | 0 | 0 | 0 | 31 | 147 |
| 15:30 | 7 | 3 | 0 | 14 | 0 | 0 | 0 | 24 | 147 |
| 15:45 | 2 | 1 | 2 | 12 | 0 | 0 | 0 | 17 | 125 |
| 1 Hr | 25 | 6 | 3 | 61 | 0 | 0 | 0 | 95 | 532 |
| 16:00 | 1 | 3 | 1 | 11 | 0 | 0 | 0 | 16 | 114 |
| 16:15 | 4 | 1 | 1 | 4 | 0 | 0 | 0 | 10 | 112 |
| 16:30 | 6 | 1 | 1 | 8 | 0 | 0 | 0 | 16 | 101 |
| 16:45 | 3 | 1 | 0 | 9 | 0 | 1 | 0 | 14 | 131 |
| 1 Hr | 14 | 6 | 3 | 32 | 0 | 1 | 0 | 56 | 458 |
| 17:00 | 3 | 2 | 1 | 2 | 0 | 0 | 1 | 9 | 138 |
| 17:15 | 3 | 3 | 0 | 4 | 0 | 0 | 1 | 11 | 96 |
| 17:30 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 99 |
| 17:45 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 9 | 88 |
| 1 Hr | 13 | 7 | 1 | 12 | 0 | 0 | 2 | 35 | 421 |
| 18:00 | 6 | 0 | 0 | 8 | 1 | 0 | 1 | 16 | 93 |
| 18:15 | 2 | 0 | 2 | 5 | 0 | 0 | 1 | 10 | 76 |
| 18:30 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 63 |
| 18:45 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 43 |
| 1 Hr | 13 | 0 | 2 | 16 | 1 | 0 | 2 | 34 | 275 |
| 12 Hrs | 386 | 130 | 38 | 548 | 2 | 9 | 14 | 1127 | 5649 |
| Check | | | | | | | | 1127 | 5649 |
| Total | 386 | 130 | 38 | 548 | 2 | 9 | 14 | 1127 | 5649 |
| Check | | | | | | | | 1127 | 5649 |

Tracsis plc
Traffic and Data Services

**Client:** Roadplan Consulting
**Job No:** 3082-IRE Huntstown Quarry
**Survey Date:** 22/06/2016
**Survey Method:** Video Observation
**Weather AM:** Cloudy
**Weather PM** Cloudy
**Site No:** Site 6
**Road:** Kilshane Cross

Entry: Arm A - R135 (N)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Kilshane Way (E) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 8 | 2 | 1 | 1 | 0 | 0 | 32 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 7 | 2 | 1 | 1 | 0 | 1 | 34 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 12 | 0 | 2 | 3 | 1 | 0 | 63 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 15 | 1 | 3 | 0 | 0 | 0 | 49 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 42 | 5 | 7 | 5 | 1 | 1 | 178 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 4 | 0 | 2 | 1 | 0 | 0 | 43 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 8 | 2 | 1 | 0 | 0 | 0 | 64 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 9 | 1 | 0 | 0 | 0 | 0 | 59 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 7 | 1 | 3 | 0 | 0 | 0 | 42 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 169 | 28 | 4 | 6 | 1 | 0 | 0 | 208 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 6 | 0 | 1 | 3 | 0 | 0 | 37 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 4 | 2 | 1 | 0 | 0 | 0 | 32 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 1 | 1 | 1 | 0 | 0 | 25 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 7 | 0 | 0 | 1 | 0 | 0 | 32 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 20 | 3 | 3 | 5 | 0 | 0 | 126 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 3 | 1 | 2 | 1 | 0 | 0 | 24 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 2 | 0 | 0 | 0 | 0 | 24 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 3 | 3 | 1 | 1 | 0 | 0 | 31 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 2 | 1 | 0 | 1 | 0 | 11 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 11 | 8 | 4 | 2 | 1 | 0 | 90 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | 2 | 1 | 1 | 0 | 0 | 29 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 4 | 5 | 0 | 0 | 0 | 0 | 28 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 2 | 1 | 1 | 1 | 0 | 0 | 24 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 6 | 0 | 0 | 0 | 0 | 0 | 26 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 18 | 8 | 2 | 2 | 0 | 0 | 107 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 1 | 1 | 0 | 0 | 20 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 5 | 1 | 2 | 1 | 0 | 0 | 29 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 5 | 2 | 0 | 1 | 0 | 0 | 39 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 4 | 0 | 1 | 1 | 0 | 0 | 28 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 14 | 3 | 4 | 4 | 0 | 0 | 116 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 3 | 2 | 0 | 2 | 0 | 0 | 28 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 4 | 2 | 0 | 0 | 0 | 0 | 41 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 3 | 2 | 0 | 0 | 0 | 1 | 26 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 31 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | 13 | 6 | 0 | 2 | 0 | 1 | 126 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 3 | 3 | 2 | 2 | 0 | 1 | 32 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 8 | 1 | 4 | 1 | 0 | 0 | 44 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 8 | 2 | 0 | 1 | 0 | 0 | 39 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 7 | 2 | 3 | 0 | 0 | 2 | 32 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 26 | 8 | 9 | 4 | 0 | 3 | 147 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 8 | 0 | 1 | 1 | 0 | 0 | 41 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 1 | 1 | 0 | 0 | 0 | 24 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 5 | 0 | 4 | 0 | 0 | 0 | 37 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 5 | 1 | 1 | 0 | 1 | 1 | 28 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 19 | 2 | 7 | 1 | 1 | 1 | 130 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 3 | 1 | 1 | 1 | 0 | 0 | 24 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 5 | 3 | 2 | 1 | 1 | 0 | 33 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 6 | 0 | 0 | 0 | 0 | 0 | 37 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 3 | 0 | 0 | 1 | 0 | 0 | 41 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 | 17 | 4 | 3 | 3 | 1 | 0 | 135 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 5 | 0 | 3 | 1 | 0 | 1 | 38 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 3 | 1 | 0 | 0 | 0 | 0 | 45 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 4 | 0 | 3 | 0 | 0 | 0 | 44 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 2 | 0 | 1 | 1 | 0 | 0 | 38 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 14 | 1 | 7 | 2 | 0 | 1 | 165 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 0 | 1 | 1 | 1 | 1 | 31 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 3 | 0 | 0 | 0 | 1 | 0 | 29 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 4 | 0 | 2 | 1 | 0 | 0 | 34 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 1 | 1 | 0 | 0 | 20 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 | 8 | 0 | 4 | 3 | 2 | 1 | 114 |
| 12 Hrs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1256 | 230 | 52 | 56 | 34 | 6 | 8 | 1642 |
| Check | | | | | | | | 0 | | | | | | | | 1642 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1256 | 230 | 52 | 56 | 34 | 6 | 8 | 1642 |
| Check | | | | | | | | 0 | | | | | | | | 1642 |

| | Destination: Arm C - R135 (S) | | | | | | | | Destination: Arm D - Kilshane Way (W) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 12 | 3 | 1 | 1 | 0 | 0 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 07:15 | 5 | 4 | 3 | 2 | 2 | 0 | 0 | 16 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 7 | 57 |
| 07:30 | 19 | 5 | 4 | 3 | 1 | 0 | 2 | 34 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |
| 07:45 | 19 | 8 | 0 | 1 | 3 | 0 | 1 | 32 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 87 |
| 1 Hr | 55 | 20 | 8 | 7 | 6 | 0 | 4 | 100 | 10 | 4 | 1 | 1 | 0 | 0 | 0 | 16 | 294 |
| 08:00 | 14 | 9 | 0 | 2 | 1 | 0 | 4 | 30 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 10 | 83 |
| 08:15 | 11 | 3 | 1 | 4 | 0 | 1 | 1 | 21 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 10 | 95 |
| 08:30 | 7 | 8 | 0 | 1 | 1 | 0 | 1 | 18 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 82 |
| 08:45 | 12 | 2 | 0 | 3 | 2 | 0 | 0 | 19 | 9 | 1 | 1 | 0 | 0 | 1 | 0 | 12 | 73 |
| 1 Hr | 44 | 22 | 1 | 10 | 4 | 1 | 6 | 88 | 24 | 10 | 2 | 0 | 0 | 1 | 0 | 37 | 333 |
| 09:00 | 9 | 5 | 3 | 1 | 0 | 0 | 1 | 19 | 8 | 2 | 0 | 0 | 1 | 0 | 0 | 11 | 67 |
| 09:15 | 19 | 2 | 1 | 3 | 1 | 0 | 1 | 27 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 8 | 67 |
| 09:30 | 14 | 7 | 3 | 6 | 1 | 0 | 0 | 31 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 60 |
| 09:45 | 13 | 7 | 1 | 2 | 0 | 0 | 0 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 57 |
| 1 Hr | 55 | 21 | 8 | 12 | 2 | 0 | 2 | 100 | 18 | 6 | 0 | 0 | 1 | 0 | 0 | 25 | 251 |
| 10:00 | 5 | 5 | 0 | 2 | 1 | 0 | 1 | 14 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 5 | 43 |
| 10:15 | 9 | 5 | 0 | 1 | 1 | 0 | 0 | 16 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 42 |
| 10:30 | 7 | 4 | 0 | 1 | 1 | 0 | 0 | 13 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 50 |
| 10:45 | 4 | 5 | 0 | 6 | 1 | 0 | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 30 |
| 1 Hr | 25 | 19 | 0 | 10 | 4 | 0 | 1 | 59 | 8 | 4 | 2 | 2 | 0 | 0 | 0 | 16 | 165 |
| 11:00 | 11 | 4 | 0 | 1 | 0 | 0 | 1 | 17 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 50 |
| 11:15 | 6 | 7 | 0 | 3 | 1 | 0 | 0 | 17 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 48 |
| 11:30 | 8 | 2 | 3 | 0 | 1 | 0 | 0 | 14 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 45 |
| 11:45 | 12 | 3 | 2 | 4 | 0 | 0 | 0 | 21 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 8 | 55 |
| 1 Hr | 37 | 16 | 5 | 8 | 2 | 0 | 1 | 69 | 11 | 8 | 3 | 0 | 0 | 0 | 0 | 22 | 198 |
| 12:00 | 8 | 3 | 1 | 2 | 1 | 0 | 0 | 15 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 41 |
| 12:15 | 10 | 4 | 0 | 1 | 1 | 0 | 1 | 17 | 3 | 2 | 0 | 0 | 0 | 1 | 0 | 6 | 52 |
| 12:30 | 12 | 4 | 4 | 0 | 0 | 0 | 0 | 20 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 64 |
| 12:45 | 10 | 4 | 0 | 0 | 1 | 0 | 0 | 15 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 6 | 49 |
| 1 Hr | 40 | 15 | 5 | 3 | 3 | 0 | 1 | 67 | 13 | 7 | 2 | 0 | 0 | 1 | 0 | 23 | 206 |
| 13:00 | 16 | 5 | 1 | 7 | 1 | 0 | 0 | 30 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 63 |
| 13:15 | 17 | 6 | 1 | 5 | 1 | 0 | 0 | 30 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 83 |
| 13:30 | 13 | 9 | 0 | 5 | 1 | 1 | 0 | 29 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 9 | 64 |
| 13:45 | 12 | 4 | 0 | 3 | 0 | 0 | 0 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 52 |
| 1 Hr | 58 | 24 | 2 | 20 | 3 | 1 | 0 | 108 | 23 | 4 | 1 | 0 | 0 | 0 | 0 | 28 | 262 |
| 14:00 | 16 | 5 | 0 | 2 | 1 | 0 | 0 | 24 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 65 |
| 14:15 | 15 | 3 | 2 | 1 | 1 | 1 | 0 | 23 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 70 |
| 14:30 | 14 | 9 | 1 | 2 | 1 | 0 | 0 | 27 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 68 |
| 14:45 | 12 | 3 | 0 | 5 | 0 | 1 | 0 | 21 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 58 |
| 1 Hr | 57 | 20 | 3 | 10 | 3 | 2 | 0 | 95 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 19 | 261 |
| 15:00 | 7 | 4 | 0 | 2 | 2 | 0 | 0 | 15 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 10 | 66 |
| 15:15 | 16 | 2 | 0 | 4 | 0 | 0 | 0 | 22 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 49 |
| 15:30 | 19 | 7 | 0 | 1 | 1 | 0 | 0 | 28 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 8 | 73 |
| 15:45 | 11 | 3 | 2 | 1 | 1 | 0 | 0 | 18 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 49 |
| 1 Hr | 53 | 16 | 2 | 8 | 4 | 0 | 0 | 83 | 14 | 5 | 5 | 0 | 0 | 0 | 0 | 24 | 237 |
| 16:00 | 11 | 6 | 1 | 4 | 1 | 0 | 0 | 23 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 51 |
| 16:15 | 10 | 1 | 1 | 2 | 0 | 0 | 0 | 14 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 6 | 53 |
| 16:30 | 7 | 5 | 0 | 2 | 1 | 3 | 0 | 18 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 5 | 60 |
| 16:45 | 19 | 3 | 1 | 3 | 0 | 0 | 1 | 27 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 72 |
| 1 Hr | 47 | 15 | 3 | 11 | 2 | 3 | 1 | 82 | 10 | 5 | 2 | 2 | 0 | 0 | 0 | 19 | 236 |
| 17:00 | 9 | 5 | 0 | 1 | 0 | 0 | 1 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 58 |
| 17:15 | 14 | 6 | 0 | 1 | 1 | 0 | 1 | 23 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 71 |
| 17:30 | 10 | 4 | 2 | 1 | 1 | 1 | 1 | 20 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 69 |
| 17:45 | 19 | 2 | 2 | 3 | 0 | 0 | 1 | 27 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 67 |
| 1 Hr | 52 | 17 | 4 | 6 | 2 | 1 | 4 | 86 | 11 | 1 | 0 | 2 | 0 | 0 | 0 | 14 | 265 |
| 18:00 | 12 | 1 | 1 | 5 | 2 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 53 |
| 18:15 | 8 | 4 | 2 | 2 | 0 | 0 | 1 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 47 |
| 18:30 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 55 |
| 18:45 | 8 | 2 | 0 | 0 | 2 | 0 | 0 | 12 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 37 |
| 1 Hr | 43 | 9 | 3 | 7 | 4 | 0 | 1 | 67 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 192 |
| 12 Hrs | 566 | 214 | 44 | 112 | 39 | 8 | 21 | 1004 | 166 | 60 | 18 | 7 | 1 | 2 | 0 | 254 | 2900 |
| Check | | | | | | | | 1004 | | | | | | | | 254 | 2900 |
| Total | 566 | 214 | 44 | 112 | 39 | 8 | 21 | 1004 | 166 | 60 | 18 | 7 | 1 | 2 | 0 | 254 | 2900 |
| Check | | | | | | | | 1004 | | | | | | | | 254 | 2900 |

Entry: Arm B - Kilshane Way (E)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Kilshane Way (E) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 9 | 3 | 1 | 3 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 | 13 | 2 | 0 | 1 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 16 | 0 | 0 | 3 | 1 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 12 | 5 | 0 | 2 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 50 | 10 | 1 | 9 | 1 | 0 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 18 | 1 | 1 | 2 | 0 | 0 | 1 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 16 | 2 | 1 | 1 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 11 | 2 | 0 | 1 | 0 | 1 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 | 8 | 7 | 0 | 1 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 53 | 12 | 2 | 5 | 0 | 1 | 1 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 | 8 | 3 | 2 | 2 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 16 | 5 | 2 | 4 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 | 10 | 2 | 1 | 1 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 39 | 10 | 7 | 7 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 | 16 | 4 | 1 | 3 | 1 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 | 17 | 3 | 4 | 1 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 | 23 | 8 | 0 | 3 | 1 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 | 23 | 3 | 2 | 2 | 1 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 79 | 18 | 7 | 9 | 3 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 | 16 | 6 | 1 | 2 | 3 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 | 13 | 1 | 2 | 3 | 1 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 14 | 7 | 3 | 2 | 1 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 20 | 2 | 2 | 5 | 1 | 1 | 1 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 63 | 16 | 8 | 12 | 6 | 1 | 1 | 107 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 24 | 1 | 1 | 1 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 24 | 3 | 2 | 1 | 1 | 1 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 17 | 4 | 5 | 2 | 2 | 0 | 1 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 23 | 3 | 4 | 3 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 88 | 11 | 12 | 7 | 3 | 1 | 1 | 123 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 30 | 3 | 2 | 2 | 2 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 20 | 6 | 2 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:30 | 28 | 5 | 3 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:45 | 20 | 7 | 2 | 3 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 98 | 21 | 9 | 5 | 2 | 0 | 0 | 135 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:00 | 21 | 3 | 1 | 4 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:15 | 21 | 5 | 2 | 1 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:30 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:45 | 34 | 7 | 4 | 2 | 1 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 91 | 16 | 7 | 7 | 1 | 0 | 0 | 122 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 20 | 5 | 1 | 1 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 25 | 7 | 0 | 1 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 37 | 5 | 0 | 0 | 3 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 31 | 3 | 1 | 5 | 0 | 0 | 2 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 113 | 20 | 2 | 7 | 3 | 0 | 2 | 147 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 29 | 7 | 1 | 1 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 33 | 12 | 2 | 1 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 | 26 | 5 | 2 | 3 | 1 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 42 | 10 | 3 | 1 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 130 | 34 | 8 | 6 | 1 | 0 | 0 | 179 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 29 | 11 | 3 | 2 | 0 | 0 | 1 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 41 | 4 | 1 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 49 | 5 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 51 | 4 | 1 | 1 | 0 | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 170 | 24 | 5 | 5 | 0 | 0 | 1 | 205 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:00 | 53 | 8 | 2 | 2 | 0 | 0 | 1 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:15 | 45 | 5 | 0 | 0 | 0 | 3 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:30 | 28 | 10 | 1 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:45 | 28 | 4 | 1 | 2 | 1 | 1 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 Hr | 154 | 27 | 4 | 4 | 1 | 4 | 1 | 195 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 Hrs | 1128 | 219 | 72 | 83 | 21 | 7 | 7 | 1537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Check | | | | | | | | 1537 | | | | | | | | 0 |
| Total | 1128 | 219 | 72 | 83 | 21 | 7 | 7 | 1537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Check | | | | | | | | 1537 | | | | | | | | 0 |

| | Destination: Arm C - R135 (S) | | | | | | | | Destination: Arm D - Kilshane Way (W) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 24 | 2 | 0 | 0 | 0 | 2 | 0 | 28 | 42 | 3 | 2 | 1 | 0 | 0 | 0 | 48 | 92 |
| 07:15 | 24 | 4 | 1 | 1 | 0 | 0 | 0 | 30 | 56 | 13 | 1 | 1 | 0 | 0 | 0 | 71 | 117 |
| 07:30 | 19 | 3 | 2 | 2 | 0 | 1 | 0 | 27 | 56 | 8 | 1 | 1 | 0 | 0 | 1 | 67 | 114 |
| 07:45 | 14 | 6 | 1 | 1 | 0 | 0 | 0 | 22 | 66 | 15 | 2 | 1 | 0 | 0 | 1 | 85 | 126 |
| 1 Hr | 81 | 15 | 4 | 4 | 0 | 3 | 0 | 107 | 220 | 39 | 6 | 4 | 0 | 0 | 2 | 271 | 449 |
| 08:00 | 14 | 5 | 2 | 1 | 0 | 0 | 0 | 22 | 72 | 9 | 2 | 0 | 0 | 0 | 1 | 84 | 129 |
| 08:15 | 14 | 3 | 1 | 1 | 0 | 0 | 0 | 19 | 73 | 7 | 4 | 0 | 0 | 0 | 0 | 84 | 123 |
| 08:30 | 5 | 2 | 2 | 3 | 0 | 0 | 0 | 12 | 81 | 8 | 6 | 0 | 0 | 0 | 0 | 95 | 122 |
| 08:45 | 10 | 1 | 1 | 1 | 0 | 0 | 0 | 13 | 72 | 11 | 5 | 2 | 0 | 1 | 0 | 91 | 120 |
| 1 Hr | 43 | 11 | 6 | 6 | 0 | 0 | 0 | 66 | 298 | 35 | 17 | 2 | 0 | 1 | 1 | 354 | 494 |
| 09:00 | 15 | 5 | 2 | 2 | 1 | 0 | 0 | 25 | 78 | 12 | 8 | 2 | 0 | 0 | 2 | 102 | 142 |
| 09:15 | 15 | 5 | 1 | 3 | 0 | 0 | 0 | 24 | 54 | 17 | 3 | 1 | 1 | 0 | 1 | 77 | 128 |
| 09:30 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 14 | 31 | 17 | 4 | 1 | 1 | 0 | 0 | 54 | 75 |
| 09:45 | 6 | 4 | 3 | 3 | 0 | 0 | 0 | 16 | 30 | 7 | 4 | 1 | 0 | 1 | 0 | 43 | 73 |
| 1 Hr | 48 | 14 | 7 | 9 | 1 | 0 | 0 | 79 | 193 | 53 | 19 | 5 | 2 | 1 | 3 | 276 | 418 |
| 10:00 | 6 | 3 | 2 | 0 | 0 | 0 | 0 | 11 | 23 | 6 | 7 | 1 | 0 | 0 | 0 | 37 | 73 |
| 10:15 | 12 | 4 | 1 | 6 | 0 | 0 | 0 | 23 | 31 | 3 | 2 | 1 | 1 | 0 | 0 | 38 | 86 |
| 10:30 | 5 | 2 | 1 | 3 | 0 | 0 | 0 | 11 | 18 | 12 | 5 | 1 | 0 | 0 | 0 | 36 | 82 |
| 10:45 | 9 | 5 | 1 | 6 | 0 | 0 | 0 | 21 | 27 | 9 | 2 | 0 | 0 | 0 | 0 | 38 | 90 |
| 1 Hr | 32 | 14 | 5 | 15 | 0 | 0 | 0 | 66 | 99 | 30 | 16 | 3 | 1 | 0 | 0 | 149 | 331 |
| 11:00 | 13 | 2 | 1 | 3 | 0 | 0 | 0 | 19 | 15 | 9 | 5 | 2 | 1 | 0 | 1 | 33 | 80 |
| 11:15 | 6 | 2 | 3 | 0 | 0 | 0 | 0 | 11 | 20 | 5 | 9 | 1 | 0 | 1 | 0 | 36 | 67 |
| 11:30 | 12 | 11 | 0 | 1 | 0 | 0 | 0 | 24 | 27 | 12 | 5 | 0 | 0 | 0 | 0 | 44 | 95 |
| 11:45 | 5 | 2 | 3 | 2 | 0 | 0 | 0 | 12 | 21 | 5 | 5 | 1 | 0 | 0 | 0 | 32 | 76 |
| 1 Hr | 36 | 17 | 7 | 6 | 0 | 0 | 0 | 66 | 83 | 31 | 24 | 4 | 1 | 1 | 1 | 145 | 318 |
| 12:00 | 11 | 2 | 1 | 4 | 0 | 0 | 0 | 18 | 15 | 13 | 8 | 0 | 1 | 0 | 0 | 37 | 82 |
| 12:15 | 8 | 3 | 2 | 2 | 0 | 0 | 0 | 15 | 12 | 7 | 3 | 2 | 0 | 0 | 0 | 24 | 71 |
| 12:30 | 6 | 1 | 0 | 2 | 0 | 0 | 0 | 9 | 21 | 6 | 4 | 2 | 0 | 0 | 0 | 33 | 73 |
| 12:45 | 17 | 4 | 2 | 1 | 0 | 0 | 0 | 24 | 17 | 9 | 4 | 1 | 0 | 0 | 0 | 31 | 88 |
| 1 Hr | 42 | 10 | 5 | 9 | 0 | 0 | 0 | 66 | 65 | 35 | 19 | 5 | 1 | 0 | 0 | 125 | 314 |
| 13:00 | 14 | 2 | 0 | 1 | 0 | 0 | 0 | 17 | 35 | 11 | 8 | 0 | 0 | 0 | 0 | 54 | 110 |
| 13:15 | 7 | 2 | 2 | 2 | 0 | 1 | 0 | 14 | 22 | 7 | 5 | 1 | 0 | 1 | 0 | 36 | 78 |
| 13:30 | 8 | 5 | 1 | 3 | 0 | 0 | 0 | 17 | 27 | 12 | 3 | 0 | 0 | 0 | 0 | 42 | 95 |
| 13:45 | 5 | 4 | 1 | 2 | 0 | 0 | 0 | 12 | 35 | 5 | 3 | 0 | 0 | 0 | 0 | 43 | 87 |
| 1 Hr | 34 | 13 | 4 | 8 | 0 | 1 | 0 | 60 | 119 | 35 | 19 | 1 | 0 | 1 | 0 | 175 | 370 |
| 14:00 | 6 | 4 | 3 | 3 | 0 | 0 | 0 | 16 | 27 | 8 | 2 | 0 | 0 | 0 | 0 | 37 | 82 |
| 14:15 | 11 | 1 | 1 | 1 | 0 | 1 | 0 | 15 | 29 | 6 | 3 | 0 | 1 | 0 | 0 | 39 | 83 |
| 14:30 | 9 | 3 | 2 | 2 | 0 | 0 | 0 | 16 | 25 | 8 | 1 | 1 | 0 | 1 | 0 | 36 | 68 |
| 14:45 | 11 | 6 | 3 | 4 | 0 | 0 | 0 | 24 | 35 | 10 | 5 | 1 | 0 | 0 | 0 | 51 | 123 |
| 1 Hr | 37 | 14 | 9 | 10 | 0 | 1 | 0 | 71 | 116 | 32 | 11 | 2 | 1 | 1 | 0 | 163 | 356 |
| 15:00 | 9 | 2 | 1 | 4 | 0 | 0 | 0 | 16 | 29 | 13 | 6 | 1 | 0 | 0 | 0 | 49 | 92 |
| 15:15 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 7 | 30 | 8 | 5 | 0 | 0 | 1 | 0 | 44 | 84 |
| 15:30 | 7 | 1 | 0 | 5 | 0 | 0 | 0 | 13 | 28 | 12 | 6 | 1 | 0 | 0 | 0 | 47 | 105 |
| 15:45 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 11 | 19 | 11 | 8 | 1 | 0 | 1 | 0 | 40 | 93 |
| 1 Hr | 28 | 7 | 2 | 10 | 0 | 0 | 0 | 47 | 106 | 44 | 25 | 3 | 0 | 2 | 0 | 180 | 374 |
| 16:00 | 7 | 8 | 0 | 1 | 0 | 0 | 0 | 16 | 30 | 9 | 7 | 2 | 0 | 0 | 0 | 48 | 102 |
| 16:15 | 5 | 2 | 2 | 4 | 0 | 0 | 0 | 13 | 29 | 7 | 5 | 1 | 0 | 0 | 0 | 42 | 103 |
| 16:30 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 15 | 26 | 6 | 2 | 1 | 0 | 0 | 0 | 35 | 87 |
| 16:45 | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 9 | 42 | 7 | 6 | 2 | 1 | 1 | 0 | 59 | 124 |
| 1 Hr | 27 | 17 | 3 | 6 | 0 | 0 | 0 | 53 | 127 | 29 | 20 | 6 | 1 | 1 | 0 | 184 | 416 |
| 17:00 | 16 | 1 | 0 | 2 | 0 | 0 | 0 | 19 | 30 | 3 | 1 | 2 | 0 | 0 | 0 | 36 | 101 |
| 17:15 | 24 | 3 | 0 | 1 | 0 | 0 | 0 | 28 | 45 | 11 | 2 | 1 | 0 | 0 | 0 | 59 | 135 |
| 17:30 | 23 | 5 | 0 | 1 | 0 | 0 | 0 | 29 | 32 | 5 | 6 | 0 | 1 | 0 | 1 | 45 | 128 |
| 17:45 | 23 | 2 | 0 | 2 | 1 | 0 | 0 | 28 | 43 | 6 | 2 | 0 | 1 | 0 | 0 | 52 | 137 |
| 1 Hr | 86 | 11 | 0 | 6 | 1 | 0 | 0 | 104 | 150 | 25 | 11 | 3 | 2 | 0 | 1 | 192 | 501 |
| 18:00 | 17 | 2 | 0 | 0 | 0 | 0 | 1 | 20 | 55 | 5 | 2 | 2 | 0 | 1 | 2 | 67 | 153 |
| 18:15 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | 11 | 34 | 7 | 2 | 0 | 5 | 0 | 0 | 48 | 112 |
| 18:30 | 11 | 1 | 0 | 1 | 0 | 1 | 0 | 14 | 17 | 6 | 1 | 3 | 0 | 0 | 0 | 27 | 80 |
| 18:45 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 13 | 4 | 1 | 0 | 3 | 0 | 0 | 21 | 67 |
| 1 Hr | 44 | 6 | 0 | 2 | 0 | 1 | 1 | 54 | 119 | 22 | 6 | 5 | 8 | 1 | 2 | 163 | 412 |
| 12 Hrs | 538 | 149 | 52 | 91 | 2 | 6 | 1 | 839 | 1695 | 410 | 193 | 43 | 17 | 9 | 10 | 2377 | 4753 |
| Check | | | | | | | | 839 | | | | | | | | 2377 | 4753 |
| Total | 538 | 149 | 52 | 91 | 2 | 6 | 1 | 839 | 1695 | 410 | 193 | 43 | 17 | 9 | 10 | 2377 | 4753 |
| Check | | | | | | | | 839 | | | | | | | | 2377 | 4753 |

Entry: Arm C - R135 (S)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Kilshane Way (E) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 8 | 9 | 4 | 1 | 1 | 0 | 0 | 0 | 15 |
| 07:15 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 9 | 9 | 1 | 2 | 2 | 0 | 0 | 0 | 14 |
| 07:30 | 0 | 2 | 0 | 3 | 2 | 0 | 0 | 7 | 8 | 4 | 1 | 4 | 1 | 0 | 0 | 18 |
| 07:45 | 10 | 3 | 0 | 5 | 0 | 0 | 1 | 19 | 11 | 6 | 0 | 5 | 0 | 0 | 0 | 22 |
| 1 Hr | 16 | 11 | 2 | 10 | 3 | 0 | 1 | 43 | 37 | 15 | 4 | 12 | 1 | 0 | 0 | 69 |
| 08:00 | 1 | 10 | 0 | 2 | 1 | 0 | 1 | 15 | 9 | 0 | 2 | 2 | 0 | 0 | 0 | 13 |
| 08:15 | 8 | 3 | 0 | 4 | 1 | 2 | 0 | 18 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 20 |
| 08:30 | 7 | 2 | 2 | 1 | 0 | 0 | 0 | 12 | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 15 |
| 08:45 | 7 | 1 | 1 | 4 | 2 | 0 | 0 | 15 | 6 | 2 | 1 | 4 | 0 | 0 | 0 | 13 |
| 1 Hr | 23 | 16 | 3 | 11 | 4 | 2 | 1 | 60 | 41 | 11 | 3 | 6 | 0 | 0 | 0 | 61 |
| 09:00 | 7 | 4 | 2 | 3 | 1 | 0 | 0 | 17 | 10 | 3 | 3 | 2 | 0 | 0 | 0 | 18 |
| 09:15 | 2 | 5 | 3 | 8 | 1 | 0 | 0 | 19 | 4 | 5 | 0 | 3 | 0 | 1 | 0 | 13 |
| 09:30 | 12 | 3 | 1 | 3 | 0 | 0 | 0 | 19 | 3 | 6 | 0 | 3 | 0 | 0 | 0 | 12 |
| 09:45 | 5 | 5 | 1 | 3 | 2 | 0 | 0 | 16 | 8 | 2 | 1 | 3 | 0 | 0 | 0 | 14 |
| 1 Hr | 26 | 17 | 7 | 17 | 4 | 0 | 0 | 71 | 25 | 16 | 4 | 11 | 0 | 1 | 0 | 57 |
| 10:00 | 7 | 8 | 1 | 3 | 1 | 0 | 0 | 20 | 7 | 3 | 2 | 1 | 0 | 1 | 0 | 14 |
| 10:15 | 11 | 2 | 1 | 4 | 1 | 0 | 0 | 19 | 6 | 2 | 1 | 2 | 0 | 0 | 0 | 11 |
| 10:30 | 8 | 6 | 1 | 2 | 1 | 0 | 0 | 18 | 4 | 2 | 3 | 1 | 0 | 0 | 0 | 10 |
| 10:45 | 4 | 4 | 0 | 2 | 1 | 0 | 0 | 11 | 9 | 2 | 1 | 2 | 0 | 0 | 0 | 14 |
| 1 Hr | 30 | 20 | 3 | 11 | 4 | 0 | 0 | 68 | 26 | 9 | 7 | 6 | 0 | 1 | 0 | 49 |
| 11:00 | 3 | 4 | 1 | 0 | 1 | 0 | 0 | 9 | 5 | 3 | 2 | 3 | 0 | 0 | 0 | 13 |
| 11:15 | 4 | 3 | 2 | 2 | 0 | 0 | 2 | 13 | 4 | 6 | 0 | 3 | 0 | 0 | 0 | 13 |
| 11:30 | 3 | 5 | 1 | 3 | 0 | 0 | 0 | 12 | 3 | 3 | 3 | 1 | 0 | 0 | 0 | 10 |
| 11:45 | 13 | 4 | 1 | 3 | 2 | 0 | 0 | 23 | 4 | 6 | 2 | 4 | 0 | 0 | 0 | 16 |
| 1 Hr | 23 | 16 | 5 | 8 | 3 | 0 | 2 | 57 | 16 | 18 | 7 | 11 | 0 | 0 | 0 | 52 |
| 12:00 | 10 | 4 | 0 | 4 | 1 | 0 | 0 | 19 | 8 | 3 | 3 | 1 | 0 | 0 | 0 | 15 |
| 12:15 | 18 | 6 | 1 | 5 | 0 | 0 | 0 | 30 | 9 | 4 | 1 | 4 | 0 | 0 | 0 | 18 |
| 12:30 | 22 | 7 | 1 | 3 | 2 | 0 | 0 | 35 | 10 | 7 | 4 | 1 | 0 | 0 | 0 | 22 |
| 12:45 | 14 | 6 | 2 | 2 | 1 | 0 | 0 | 25 | 8 | 3 | 2 | 3 | 0 | 0 | 0 | 16 |
| 1 Hr | 64 | 23 | 4 | 14 | 4 | 0 | 0 | 109 | 35 | 17 | 10 | 9 | 0 | 0 | 0 | 71 |
| 13:00 | 15 | 3 | 2 | 3 | 1 | 0 | 0 | 24 | 8 | 6 | 1 | 3 | 0 | 0 | 0 | 18 |
| 13:15 | 15 | 4 | 0 | 1 | 1 | 0 | 0 | 21 | 14 | 4 | 8 | 2 | 1 | 0 | 0 | 29 |
| 13:30 | 22 | 1 | 2 | 4 | 0 | 0 | 0 | 29 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 12 |
| 13:45 | 13 | 3 | 3 | 4 | 2 | 0 | 0 | 25 | 14 | 5 | 1 | 3 | 0 | 0 | 0 | 23 |
| 1 Hr | 65 | 11 | 7 | 12 | 4 | 0 | 0 | 99 | 46 | 16 | 11 | 8 | 1 | 0 | 0 | 82 |
| 14:00 | 12 | 4 | 1 | 4 | 1 | 0 | 0 | 22 | 6 | 1 | 0 | 4 | 0 | 0 | 0 | 11 |
| 14:15 | 14 | 7 | 2 | 1 | 1 | 1 | 0 | 26 | 7 | 3 | 3 | 2 | 0 | 0 | 0 | 15 |
| 14:30 | 8 | 3 | 1 | 7 | 1 | 0 | 0 | 20 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 12 |
| 14:45 | 11 | 3 | 0 | 5 | 1 | 1 | 0 | 21 | 16 | 5 | 0 | 1 | 0 | 0 | 0 | 22 |
| 1 Hr | 45 | 17 | 4 | 17 | 4 | 2 | 0 | 89 | 34 | 13 | 5 | 8 | 0 | 0 | 0 | 60 |
| 15:00 | 11 | 3 | 3 | 4 | 1 | 0 | 0 | 22 | 7 | 4 | 3 | 3 | 0 | 0 | 0 | 17 |
| 15:15 | 14 | 2 | 0 | 5 | 1 | 0 | 0 | 22 | 10 | 6 | 1 | 3 | 0 | 0 | 0 | 20 |
| 15:30 | 7 | 5 | 2 | 7 | 1 | 0 | 0 | 22 | 15 | 7 | 1 | 1 | 0 | 0 | 0 | 24 |
| 15:45 | 10 | 4 | 1 | 4 | 1 | 0 | 2 | 22 | 11 | 6 | 5 | 1 | 0 | 0 | 0 | 23 |
| 1 Hr | 42 | 14 | 6 | 20 | 4 | 0 | 2 | 88 | 43 | 23 | 10 | 8 | 0 | 0 | 0 | 84 |
| 16:00 | 7 | 7 | 2 | 8 | 1 | 1 | 0 | 26 | 10 | 6 | 1 | 2 | 0 | 0 | 0 | 19 |
| 16:15 | 13 | 6 | 0 | 5 | 1 | 0 | 0 | 25 | 15 | 5 | 1 | 4 | 0 | 0 | 0 | 25 |
| 16:30 | 10 | 4 | 1 | 6 | 0 | 1 | 1 | 23 | 16 | 4 | 1 | 5 | 0 | 1 | 0 | 27 |
| 16:45 | 19 | 6 | 0 | 4 | 2 | 0 | 0 | 31 | 15 | 2 | 1 | 2 | 0 | 0 | 0 | 20 |
| 1 Hr | 49 | 23 | 3 | 23 | 4 | 2 | 1 | 105 | 56 | 17 | 4 | 13 | 0 | 1 | 0 | 91 |
| 17:00 | 17 | 4 | 1 | 1 | 1 | 1 | 1 | 26 | 26 | 2 | 2 | 3 | 0 | 0 | 0 | 33 |
| 17:15 | 15 | 5 | 1 | 3 | 0 | 0 | 1 | 25 | 22 | 5 | 0 | 1 | 1 | 2 | 0 | 31 |
| 17:30 | 17 | 6 | 1 | 1 | 1 | 0 | 3 | 29 | 25 | 5 | 3 | 3 | 0 | 0 | 0 | 36 |
| 17:45 | 24 | 0 | 4 | 2 | 2 | 1 | 1 | 34 | 15 | 2 | 2 | 0 | 0 | 0 | 0 | 19 |
| 1 Hr | 73 | 15 | 7 | 7 | 4 | 2 | 6 | 114 | 88 | 14 | 7 | 7 | 1 | 2 | 0 | 119 |
| 18:00 | 16 | 1 | 0 | 1 | 3 | 1 | 3 | 25 | 16 | 2 | 3 | 0 | 0 | 0 | 0 | 21 |
| 18:15 | 18 | 6 | 0 | 1 | 2 | 0 | 0 | 27 | 13 | 3 | 0 | 1 | 0 | 1 | 0 | 18 |
| 18:30 | 12 | 1 | 0 | 2 | 1 | 0 | 1 | 17 | 13 | 3 | 0 | 2 | 0 | 1 | 0 | 19 |
| 18:45 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 11 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 13 |
| 1 Hr | 50 | 10 | 1 | 5 | 7 | 2 | 5 | 80 | 50 | 12 | 4 | 3 | 0 | 2 | 0 | 71 |
| 12 Hrs | 506 | 193 | 52 | 155 | 49 | 10 | 18 | 983 | 497 | 181 | 76 | 102 | 3 | 7 | 0 | 866 |
| Check | | | | | | | | 983 | | | | | | | | 866 |
| Total | 506 | 193 | 52 | 155 | 49 | 10 | 18 | 983 | 497 | 181 | 76 | 102 | 3 | 7 | 0 | 866 |
| Check | | | | | | | | 983 | | | | | | | | 866 |

| | Destination: Arm C - R135 (S) | | | | | | | | Destination: Arm D - Kilshane Way (W) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 9 | 4 | 0 | 0 | 0 | 0 | 29 | 52 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 5 | 4 | 1 | 0 | 0 | 0 | 28 | 51 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 10 | 5 | 2 | 0 | 0 | 0 | 35 | 60 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 25 | 2 | 0 | 0 | 0 | 0 | 66 | 107 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 49 | 15 | 3 | 0 | 0 | 0 | 158 | 270 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 9 | 2 | 3 | 0 | 0 | 0 | 47 | 75 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 13 | 3 | 2 | 0 | 0 | 0 | 57 | 95 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 21 | 2 | 2 | 0 | 1 | 0 | 66 | 93 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 13 | 5 | 4 | 0 | 1 | 0 | 70 | 98 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 159 | 56 | 12 | 11 | 0 | 2 | 0 | 240 | 361 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 10 | 4 | 2 | 0 | 0 | 0 | 48 | 83 |
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 7 | 3 | 3 | 1 | 0 | 0 | 49 | 81 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 14 | 4 | 2 | 1 | 0 | 0 | 42 | 73 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 15 | 4 | 0 | 0 | 0 | 0 | 30 | 60 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 46 | 15 | 7 | 2 | 0 | 0 | 169 | 297 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 10 | 5 | 1 | 0 | 0 | 0 | 33 | 67 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 8 | 7 | 1 | 1 | 0 | 0 | 28 | 58 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 15 | 0 | 1 | 1 | 0 | 0 | 30 | 58 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 9 | 4 | 2 | 0 | 0 | 0 | 28 | 53 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 42 | 16 | 5 | 2 | 0 | 0 | 119 | 236 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 9 | 5 | 1 | 0 | 1 | 0 | 31 | 53 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | 4 | 5 | 0 | 0 | 0 | 34 | 60 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12 | 2 | 2 | 0 | 0 | 1 | 24 | 46 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 11 | 3 | 2 | 0 | 0 | 0 | 29 | 68 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 42 | 14 | 10 | 0 | 1 | 1 | 118 | 227 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 9 | 6 | 2 | 0 | 0 | 0 | 29 | 63 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 12 | 2 | 1 | 1 | 0 | 0 | 27 | 75 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 11 | 3 | 0 | 0 | 0 | 0 | 27 | 84 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 3 | 4 | 1 | 0 | 0 | 0 | 24 | 65 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 35 | 15 | 4 | 1 | 0 | 0 | 107 | 287 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 10 | 10 | 2 | 0 | 0 | 0 | 34 | 76 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 13 | 0 | 0 | 0 | 0 | 0 | 24 | 74 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 7 | 2 | 0 | 0 | 0 | 29 | 70 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 7 | 4 | 3 | 0 | 0 | 0 | 27 | 75 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 40 | 21 | 7 | 0 | 0 | 0 | 114 | 295 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 10 | 5 | 2 | 0 | 1 | 0 | 29 | 62 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 11 | 3 | 0 | 0 | 0 | 0 | 28 | 69 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 1 | 3 | 0 | 0 | 0 | 20 | 52 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 6 | 1 | 0 | 0 | 0 | 25 | 68 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 39 | 15 | 6 | 0 | 1 | 0 | 102 | 251 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 11 | 8 | 2 | 0 | 0 | 0 | 34 | 73 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 7 | 4 | 4 | 1 | 0 | 0 | 30 | 72 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 11 | 6 | 3 | 0 | 0 | 0 | 41 | 87 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12 | 1 | 0 | 1 | 0 | 0 | 21 | 66 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 41 | 19 | 9 | 2 | 0 | 0 | 126 | 298 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 7 | 2 | 0 | 0 | 1 | 32 | 77 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 4 | 1 | 0 | 0 | 0 | 21 | 71 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 1 | 2 | 0 | 0 | 0 | 17 | 67 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 9 | 5 | 3 | 0 | 0 | 0 | 34 | 85 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 35 | 17 | 8 | 0 | 0 | 1 | 104 | 300 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 10 | 4 | 4 | 0 | 0 | 0 | 36 | 95 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 3 | 1 | 0 | 0 | 0 | 20 | 76 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 3 | 3 | 2 | 0 | 0 | 0 | 20 | 85 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 3 | 3 | 0 | 0 | 0 | 22 | 75 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 25 | 13 | 10 | 0 | 0 | 0 | 98 | 331 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 8 | 54 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 3 | 0 | 0 | 1 | 11 | 56 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 8 | 44 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 31 |
| 1 Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 8 | 8 | 3 | 0 | 0 | 1 | 34 | 185 |
| 12 Hrs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 754 | 458 | 180 | 83 | 7 | 4 | 3 | 1489 | 3338 |
| Check | | | | | | | | 0 | | | | | | | | 1489 | 3338 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 754 | 458 | 180 | 83 | 7 | 4 | 3 | 1489 | 3338 |
| Check | | | | | | | | 0 | | | | | | | | 1489 | 3338 |

Entry: Arm D - Kilshane Way (W)

| | Destination: Arm A - R135 (N) | | | | | | | | Destination: Arm B - Kilshane Way (E) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 5 | 16 | 1 | 4 | 0 | 1 | 0 | 0 | 22 |
| 07:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 4 | 3 | 0 | 1 | 0 | 0 | 24 |
| 07:30 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 5 | 6 | 0 | 5 | 0 | 0 | 23 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 6 | 3 | 1 | 0 | 0 | 0 | 30 |
| 1 Hr | 3 | 2 | 2 | 1 | 0 | 0 | 0 | 8 | 59 | 16 | 16 | 1 | 7 | 0 | 0 | 99 |
| 08:00 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 31 | 3 | 9 | 2 | 0 | 0 | 0 | 45 |
| 08:15 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 4 | 23 | 8 | 3 | 0 | 0 | 0 | 2 | 36 |
| 08:30 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 8 | 18 | 11 | 3 | 3 | 0 | 0 | 0 | 35 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 8 | 5 | 1 | 0 | 0 | 0 | 27 |
| 1 Hr | 5 | 7 | 1 | 2 | 0 | 0 | 0 | 15 | 85 | 30 | 20 | 6 | 0 | 0 | 2 | 143 |
| 09:00 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 18 | 10 | 3 | 0 | 0 | 1 | 0 | 32 |
| 09:15 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 24 | 13 | 2 | 0 | 0 | 0 | 0 | 39 |
| 09:30 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 6 | 15 | 3 | 7 | 1 | 0 | 0 | 0 | 26 |
| 09:45 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 6 | 14 | 12 | 2 | 1 | 0 | 0 | 0 | 29 |
| 1 Hr | 5 | 6 | 5 | 0 | 0 | 0 | 0 | 16 | 71 | 38 | 14 | 2 | 0 | 1 | 0 | 126 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 6 | 3 | 1 | 0 | 0 | 0 | 23 |
| 10:15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 9 | 5 | 1 | 0 | 0 | 0 | 28 |
| 10:30 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 4 | 6 | 9 | 4 | 3 | 0 | 0 | 1 | 23 |
| 10:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 22 | 8 | 4 | 1 | 0 | 0 | 0 | 35 |
| 1 Hr | 7 | 2 | 2 | 0 | 0 | 0 | 0 | 11 | 54 | 32 | 16 | 6 | 0 | 0 | 1 | 109 |
| 11:00 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 17 | 10 | 7 | 2 | 0 | 0 | 0 | 36 |
| 11:15 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 18 | 10 | 4 | 1 | 0 | 0 | 0 | 33 |
| 11:30 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 6 | 6 | 0 | 0 | 1 | 0 | 28 |
| 11:45 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 9 | 1 | 2 | 1 | 0 | 1 | 32 |
| 1 Hr | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 16 | 68 | 35 | 18 | 5 | 1 | 1 | 1 | 129 |
| 12:00 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 22 | 17 | 8 | 1 | 0 | 0 | 0 | 48 |
| 12:15 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 15 | 4 | 4 | 2 | 0 | 0 | 0 | 25 |
| 12:30 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 7 | 28 | 14 | 5 | 0 | 0 | 1 | 0 | 48 |
| 12:45 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 8 | 23 | 9 | 2 | 2 | 0 | 0 | 1 | 37 |
| 1 Hr | 21 | 8 | 1 | 0 | 0 | 0 | 0 | 30 | 88 | 44 | 19 | 5 | 0 | 1 | 1 | 158 |
| 13:00 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 30 | 7 | 5 | 0 | 0 | 1 | 0 | 43 |
| 13:15 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 32 | 2 | 4 | 2 | 0 | 1 | 0 | 41 |
| 13:30 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 25 | 6 | 2 | 0 | 0 | 0 | 0 | 33 |
| 13:45 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 21 | 7 | 3 | 1 | 1 | 0 | 0 | 33 |
| 1 Hr | 20 | 5 | 1 | 1 | 0 | 0 | 0 | 27 | 108 | 22 | 14 | 3 | 1 | 2 | 0 | 150 |
| 14:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 29 | 7 | 5 | 1 | 0 | 0 | 0 | 42 |
| 14:15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 28 | 7 | 4 | 0 | 0 | 0 | 0 | 39 |
| 14:30 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 24 | 7 | 3 | 0 | 0 | 1 | 0 | 35 |
| 14:45 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 18 | 10 | 4 | 0 | 0 | 0 | 0 | 32 |
| 1 Hr | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 14 | 99 | 31 | 16 | 1 | 0 | 1 | 0 | 148 |
| 15:00 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 5 | 19 | 5 | 3 | 0 | 0 | 0 | 0 | 27 |
| 15:15 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 6 | 30 | 7 | 2 | 0 | 0 | 0 | 0 | 39 |
| 15:30 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 30 | 10 | 2 | 1 | 0 | 1 | 0 | 44 |
| 15:45 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 7 | 40 | 15 | 3 | 2 | 0 | 1 | 1 | 62 |
| 1 Hr | 11 | 6 | 3 | 0 | 0 | 0 | 0 | 20 | 119 | 37 | 10 | 3 | 0 | 2 | 1 | 172 |
| 16:00 | 1 | 2 | 3 | 1 | 0 | 0 | 0 | 7 | 37 | 15 | 0 | 1 | 0 | 0 | 0 | 53 |
| 16:15 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 41 | 14 | 0 | 1 | 0 | 0 | 0 | 56 |
| 16:30 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 53 | 10 | 2 | 2 | 0 | 0 | 0 | 67 |
| 16:45 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 46 | 9 | 0 | 0 | 0 | 0 | 0 | 55 |
| 1 Hr | 10 | 7 | 3 | 1 | 0 | 0 | 0 | 21 | 177 | 48 | 2 | 4 | 0 | 0 | 0 | 231 |
| 17:00 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 7 | 59 | 10 | 1 | 0 | 0 | 1 | 0 | 71 |
| 17:15 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 54 | 4 | 3 | 0 | 0 | 0 | 0 | 61 |
| 17:30 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 8 | 74 | 9 | 1 | 1 | 0 | 0 | 1 | 86 |
| 17:45 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 72 | 4 | 0 | 0 | 0 | 0 | 0 | 76 |
| 1 Hr | 18 | 6 | 2 | 0 | 0 | 0 | 0 | 26 | 259 | 27 | 5 | 1 | 0 | 1 | 1 | 294 |
| 18:00 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 57 | 1 | 4 | 0 | 0 | 1 | 0 | 63 |
| 18:15 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 31 | 1 | 0 | 1 | 0 | 1 | 2 | 36 |
| 18:30 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 32 | 5 | 0 | 0 | 0 | 0 | 1 | 38 |
| 18:45 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 23 | 2 | 1 | 0 | 0 | 0 | 0 | 26 |
| 1 Hr | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 16 | 143 | 9 | 5 | 1 | 0 | 2 | 3 | 163 |
| 12 Hrs | 130 | 65 | 20 | 5 | 0 | 0 | 0 | 220 | 1330 | 369 | 155 | 38 | 9 | 11 | 10 | 1922 |
| Check | | | | | | | | 220 | | | | | | | | 1922 |
| Total | 130 | 65 | 20 | 5 | 0 | 0 | 0 | 220 | 1330 | 369 | 155 | 38 | 9 | 11 | 10 | 1922 |
| Check | | | | | | | | 220 | | | | | | | | 1922 |

| | Destination: Arm C - R135 (S) | | | | | | | | Destination: Arm D - Kilshane Way (W) | | | | | | | | Arm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | Totals |
| 07:00 | 1 | 2 | 7 | 3 | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 07:15 | 0 | 4 | 5 | 2 | 1 | 0 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 07:30 | 1 | 5 | 3 | 3 | 1 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 07:45 | 12 | 5 | 5 | 2 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 1 Hr | 14 | 16 | 20 | 10 | 2 | 0 | 2 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 171 |
| 08:00 | 5 | 5 | 7 | 1 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 08:15 | 10 | 8 | 7 | 1 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 08:30 | 5 | 7 | 7 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 08:45 | 4 | 8 | 6 | 4 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 1 Hr | 24 | 28 | 27 | 6 | 0 | 0 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 243 |
| 09:00 | 3 | 11 | 4 | 1 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 09:15 | 6 | 10 | 5 | 1 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 09:30 | 8 | 13 | 2 | 3 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 09:45 | 5 | 9 | 8 | 1 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 1 Hr | 22 | 43 | 19 | 6 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 232 |
| 10:00 | 12 | 10 | 3 | 3 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 10:15 | 12 | 13 | 1 | 3 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 10:30 | 13 | 14 | 3 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 10:45 | 10 | 8 | 2 | 4 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 1 Hr | 47 | 45 | 9 | 10 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 231 |
| 11:00 | 8 | 8 | 4 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 11:15 | 11 | 8 | 1 | 3 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 11:30 | 16 | 4 | 7 | 1 | 0 | 1 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 11:45 | 11 | 13 | 1 | 3 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 1 Hr | 46 | 33 | 13 | 7 | 0 | 1 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 245 |
| 12:00 | 14 | 9 | 6 | 4 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| 12:15 | 11 | 8 | 6 | 1 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 12:30 | 13 | 9 | 5 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 12:45 | 17 | 14 | 3 | 2 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| 1 Hr | 55 | 40 | 20 | 7 | 0 | 0 | 0 | 122 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 310 |
| 13:00 | 10 | 2 | 4 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 13:15 | 16 | 6 | 1 | 1 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 13:30 | 11 | 6 | 3 | 1 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 13:45 | 20 | 7 | 5 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 1 Hr | 57 | 21 | 13 | 2 | 0 | 0 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 270 |
| 14:00 | 15 | 7 | 4 | 3 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 14:15 | 11 | 7 | 3 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 14:30 | 10 | 10 | 3 | 1 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 14:45 | 10 | 9 | 4 | 1 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 1 Hr | 46 | 33 | 14 | 5 | 0 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260 |
| 15:00 | 15 | 3 | 2 | 2 | 0 | 1 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 15:15 | 15 | 5 | 7 | 1 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 15:30 | 14 | 9 | 1 | 2 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 15:45 | 24 | 9 | 6 | 2 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 1 Hr | 68 | 26 | 16 | 7 | 0 | 1 | 0 | 118 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 310 |
| 16:00 | 29 | 7 | 2 | 3 | 1 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| 16:15 | 26 | 7 | 3 | 1 | 0 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| 16:30 | 26 | 11 | 1 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 16:45 | 28 | 5 | 1 | 2 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 1 Hr | 109 | 30 | 7 | 6 | 1 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 405 |
| 17:00 | 36 | 10 | 1 | 1 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| 17:15 | 26 | 5 | 2 | 2 | 0 | 1 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 17:30 | 34 | 5 | 1 | 2 | 0 | 1 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| 17:45 | 36 | 6 | 1 | 1 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| 1 Hr | 132 | 26 | 5 | 6 | 0 | 2 | 0 | 171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 491 |
| 18:00 | 38 | 3 | 1 | 0 | 0 | 0 | 1 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 18:15 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 18:30 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 18:45 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 1 Hr | 85 | 8 | 1 | 0 | 0 | 0 | 1 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 274 |
| 12 Hrs | 705 | 349 | 164 | 72 | 3 | 4 | 3 | 1300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3442 |
| Check | | | | | | | | 1300 | | | | | | | | 0 | 3442 |
| Total | 705 | 349 | 164 | 72 | 3 | 4 | 3 | 1300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3442 |
| Check | | | | | | | | 1300 | | | | | | | | 0 | 3442 |

ORIGIN SUMMARY

| | Origin: Arm A - R135 (N) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 32 | 11 | 3 | 2 | 1 | 0 | 1 | 50 |
| 07:15 | 30 | 13 | 6 | 4 | 3 | 0 | 1 | 57 |
| 07:30 | 66 | 18 | 4 | 5 | 4 | 1 | 2 | 100 |
| 07:45 | 54 | 24 | 1 | 4 | 3 | 0 | 1 | 87 |
| 1 Hr | 182 | 66 | 14 | 15 | 11 | 1 | 5 | 294 |
| 08:00 | 54 | 19 | 0 | 4 | 2 | 0 | 4 | 83 |
| 08:15 | 71 | 13 | 4 | 5 | 0 | 1 | 1 | 95 |
| 08:30 | 60 | 18 | 1 | 1 | 1 | 0 | 1 | 82 |
| 08:45 | 52 | 10 | 2 | 6 | 2 | 1 | 0 | 73 |
| 1 Hr | 237 | 60 | 7 | 16 | 5 | 2 | 6 | 333 |
| 09:00 | 44 | 13 | 3 | 2 | 4 | 0 | 1 | 67 |
| 09:15 | 49 | 9 | 3 | 4 | 1 | 0 | 1 | 67 |
| 09:30 | 36 | 11 | 4 | 7 | 2 | 0 | 0 | 60 |
| 09:45 | 39 | 14 | 1 | 2 | 1 | 0 | 0 | 57 |
| 1 Hr | 168 | 47 | 11 | 15 | 8 | 0 | 2 | 251 |
| 10:00 | 23 | 10 | 3 | 4 | 2 | 0 | 1 | 43 |
| 10:15 | 28 | 9 | 2 | 2 | 1 | 0 | 0 | 42 |
| 10:30 | 34 | 8 | 3 | 3 | 2 | 0 | 0 | 50 |
| 10:45 | 12 | 7 | 2 | 7 | 1 | 1 | 0 | 30 |
| 1 Hr | 97 | 34 | 10 | 16 | 6 | 1 | 1 | 165 |
| 11:00 | 32 | 12 | 2 | 2 | 1 | 0 | 1 | 50 |
| 11:15 | 26 | 12 | 6 | 3 | 1 | 0 | 0 | 48 |
| 11:30 | 31 | 7 | 4 | 1 | 2 | 0 | 0 | 45 |
| 11:45 | 36 | 11 | 4 | 4 | 0 | 0 | 0 | 55 |
| 1 Hr | 125 | 42 | 16 | 10 | 4 | 0 | 1 | 198 |
| 12:00 | 30 | 5 | 1 | 3 | 2 | 0 | 0 | 41 |
| 12:15 | 33 | 11 | 1 | 3 | 2 | 1 | 1 | 52 |
| 12:30 | 46 | 11 | 6 | 0 | 1 | 0 | 0 | 64 |
| 12:45 | 35 | 9 | 2 | 1 | 2 | 0 | 0 | 49 |
| 1 Hr | 144 | 36 | 10 | 7 | 7 | 1 | 1 | 206 |
| 13:00 | 41 | 8 | 4 | 7 | 3 | 0 | 0 | 63 |
| 13:15 | 63 | 11 | 3 | 5 | 1 | 0 | 0 | 83 |
| 13:30 | 39 | 15 | 2 | 5 | 1 | 1 | 1 | 64 |
| 13:45 | 42 | 7 | 0 | 3 | 0 | 0 | 0 | 52 |
| 1 Hr | 185 | 41 | 9 | 20 | 5 | 1 | 1 | 262 |
| 14:00 | 44 | 10 | 3 | 4 | 3 | 0 | 1 | 65 |
| 14:15 | 48 | 11 | 3 | 5 | 2 | 1 | 0 | 70 |
| 14:30 | 43 | 18 | 3 | 2 | 2 | 0 | 0 | 68 |
| 14:45 | 34 | 11 | 2 | 8 | 0 | 1 | 2 | 58 |
| 1 Hr | 169 | 50 | 11 | 19 | 7 | 2 | 3 | 261 |
| 15:00 | 44 | 14 | 2 | 3 | 3 | 0 | 0 | 66 |
| 15:15 | 39 | 3 | 2 | 5 | 0 | 0 | 0 | 49 |
| 15:30 | 52 | 13 | 2 | 5 | 1 | 0 | 0 | 73 |
| 15:45 | 31 | 10 | 3 | 2 | 1 | 1 | 1 | 49 |
| 1 Hr | 166 | 40 | 9 | 15 | 5 | 1 | 1 | 237 |
| 16:00 | 32 | 10 | 2 | 5 | 2 | 0 | 0 | 51 |
| 16:15 | 33 | 8 | 5 | 5 | 1 | 1 | 0 | 53 |
| 16:30 | 40 | 13 | 1 | 2 | 1 | 3 | 0 | 60 |
| 16:45 | 59 | 6 | 1 | 4 | 1 | 0 | 1 | 72 |
| 1 Hr | 164 | 37 | 9 | 16 | 5 | 4 | 1 | 236 |
| 17:00 | 41 | 10 | 0 | 4 | 1 | 0 | 2 | 58 |
| 17:15 | 57 | 10 | 1 | 1 | 1 | 0 | 1 | 71 |
| 17:30 | 51 | 8 | 2 | 5 | 1 | 1 | 1 | 69 |
| 17:45 | 54 | 4 | 2 | 5 | 1 | 0 | 1 | 67 |
| 1 Hr | 203 | 32 | 5 | 15 | 4 | 1 | 5 | 265 |
| 18:00 | 39 | 2 | 1 | 6 | 3 | 1 | 1 | 53 |
| 18:15 | 34 | 7 | 2 | 2 | 0 | 1 | 1 | 47 |
| 18:30 | 46 | 6 | 0 | 2 | 1 | 0 | 0 | 55 |
| 18:45 | 29 | 4 | 0 | 1 | 3 | 0 | 0 | 37 |
| 1 Hr | 148 | 19 | 3 | 11 | 7 | 2 | 2 | 192 |
| 12 Hrs | 1988 | 504 | 114 | 175 | 74 | 16 | 29 | 2900 |
| Check | | | | | | | | 2900 |
| Total | 1988 | 504 | 114 | 175 | 74 | 16 | 29 | 2900 |
| Check | | | | | | | | 2900 |

| | Origin: Arm B - Kilshane Way (E) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 75 | 8 | 3 | 4 | 0 | 2 | 0 | 92 |
| 07:15 | 93 | 19 | 2 | 3 | 0 | 0 | 0 | 117 |
| 07:30 | 91 | 11 | 3 | 6 | 1 | 1 | 1 | 114 |
| 07:45 | 92 | 26 | 3 | 4 | 0 | 0 | 1 | 126 |
| 1 Hr | 351 | 64 | 11 | 17 | 1 | 3 | 2 | 449 |
| 08:00 | 104 | 15 | 5 | 3 | 0 | 0 | 2 | 129 |
| 08:15 | 103 | 12 | 6 | 2 | 0 | 0 | 0 | 123 |
| 08:30 | 97 | 12 | 8 | 4 | 0 | 1 | 0 | 122 |
| 08:45 | 90 | 19 | 6 | 4 | 0 | 1 | 0 | 120 |
| 1 Hr | 394 | 58 | 25 | 13 | 0 | 2 | 2 | 494 |
| 09:00 | 101 | 20 | 12 | 6 | 1 | 0 | 2 | 142 |
| 09:15 | 85 | 27 | 6 | 8 | 1 | 0 | 1 | 128 |
| 09:30 | 48 | 17 | 7 | 2 | 1 | 0 | 0 | 75 |
| 09:45 | 46 | 13 | 8 | 5 | 0 | 1 | 0 | 73 |
| 1 Hr | 280 | 77 | 33 | 21 | 3 | 1 | 3 | 418 |
| 10:00 | 45 | 13 | 10 | 4 | 1 | 0 | 0 | 73 |
| 10:15 | 60 | 10 | 7 | 8 | 1 | 0 | 0 | 86 |
| 10:30 | 46 | 22 | 6 | 7 | 1 | 0 | 0 | 82 |
| 10:45 | 59 | 17 | 5 | 8 | 1 | 0 | 0 | 90 |
| 1 Hr | 210 | 62 | 28 | 27 | 4 | 0 | 0 | 331 |
| 11:00 | 44 | 17 | 7 | 7 | 4 | 0 | 1 | 80 |
| 11:15 | 39 | 8 | 14 | 4 | 1 | 1 | 0 | 67 |
| 11:30 | 53 | 30 | 8 | 3 | 1 | 0 | 0 | 95 |
| 11:45 | 46 | 9 | 10 | 8 | 1 | 1 | 1 | 76 |
| 1 Hr | 182 | 64 | 39 | 22 | 7 | 2 | 2 | 318 |
| 12:00 | 50 | 16 | 10 | 5 | 1 | 0 | 0 | 82 |
| 12:15 | 44 | 13 | 7 | 5 | 1 | 1 | 0 | 71 |
| 12:30 | 44 | 11 | 9 | 6 | 2 | 0 | 1 | 73 |
| 12:45 | 57 | 16 | 10 | 5 | 0 | 0 | 0 | 88 |
| 1 Hr | 195 | 56 | 36 | 21 | 4 | 1 | 1 | 314 |
| 13:00 | 79 | 16 | 10 | 3 | 2 | 0 | 0 | 110 |
| 13:15 | 49 | 15 | 9 | 3 | 0 | 2 | 0 | 78 |
| 13:30 | 63 | 22 | 7 | 3 | 0 | 0 | 0 | 95 |
| 13:45 | 60 | 16 | 6 | 5 | 0 | 0 | 0 | 87 |
| 1 Hr | 251 | 69 | 32 | 14 | 2 | 2 | 0 | 370 |
| 14:00 | 54 | 15 | 6 | 7 | 0 | 0 | 0 | 82 |
| 14:15 | 61 | 12 | 6 | 2 | 1 | 1 | 0 | 83 |
| 14:30 | 49 | 12 | 3 | 3 | 0 | 1 | 0 | 68 |
| 14:45 | 80 | 23 | 12 | 7 | 1 | 0 | 0 | 123 |
| 1 Hr | 244 | 62 | 27 | 19 | 2 | 2 | 0 | 356 |
| 15:00 | 58 | 20 | 8 | 6 | 0 | 0 | 0 | 92 |
| 15:15 | 59 | 16 | 6 | 2 | 0 | 1 | 0 | 84 |
| 15:30 | 72 | 18 | 6 | 6 | 3 | 0 | 0 | 105 |
| 15:45 | 58 | 17 | 9 | 6 | 0 | 1 | 2 | 93 |
| 1 Hr | 247 | 71 | 29 | 20 | 3 | 2 | 2 | 374 |
| 16:00 | 66 | 24 | 8 | 4 | 0 | 0 | 0 | 102 |
| 16:15 | 67 | 21 | 9 | 6 | 0 | 0 | 0 | 103 |
| 16:30 | 62 | 16 | 4 | 4 | 1 | 0 | 0 | 87 |
| 16:45 | 89 | 19 | 10 | 4 | 1 | 1 | 0 | 124 |
| 1 Hr | 284 | 80 | 31 | 18 | 2 | 1 | 0 | 416 |
| 17:00 | 75 | 15 | 4 | 6 | 0 | 0 | 1 | 101 |
| 17:15 | 110 | 18 | 3 | 4 | 0 | 0 | 0 | 135 |
| 17:30 | 104 | 15 | 6 | 1 | 1 | 0 | 1 | 128 |
| 17:45 | 117 | 12 | 3 | 3 | 2 | 0 | 0 | 137 |
| 1 Hr | 406 | 60 | 16 | 14 | 3 | 0 | 2 | 501 |
| 18:00 | 125 | 15 | 4 | 4 | 0 | 1 | 4 | 153 |
| 18:15 | 88 | 13 | 2 | 1 | 5 | 3 | 0 | 112 |
| 18:30 | 56 | 17 | 2 | 4 | 0 | 1 | 0 | 80 |
| 18:45 | 48 | 10 | 2 | 2 | 4 | 1 | 0 | 67 |
| 1 Hr | 317 | 55 | 10 | 11 | 9 | 6 | 4 | 412 |
| 12 Hrs | 3361 | 778 | 317 | 217 | 40 | 22 | 18 | 4753 |
| Check | | | | | | | | 4753 |
| Total | 3361 | 778 | 317 | 217 | 40 | 22 | 18 | 4753 |
| Check | | | | | | | | 4753 |

| | Origin: Arm C - R135 (S) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 28 | 16 | 6 | 2 | 0 | 0 | 0 | 52 |
| 07:15 | 30 | 9 | 7 | 4 | 1 | 0 | 0 | 51 |
| 07:30 | 26 | 16 | 6 | 9 | 3 | 0 | 0 | 60 |
| 07:45 | 60 | 34 | 2 | 10 | 0 | 0 | 1 | 107 |
| 1 Hr | 144 | 75 | 21 | 25 | 4 | 0 | 1 | 270 |
| 08:00 | 43 | 19 | 4 | 7 | 1 | 0 | 1 | 75 |
| 08:15 | 65 | 18 | 3 | 6 | 1 | 2 | 0 | 95 |
| 08:30 | 55 | 30 | 4 | 3 | 0 | 1 | 0 | 93 |
| 08:45 | 60 | 16 | 7 | 12 | 2 | 1 | 0 | 98 |
| 1 Hr | 223 | 83 | 18 | 28 | 4 | 4 | 1 | 361 |
| 09:00 | 49 | 17 | 9 | 7 | 1 | 0 | 0 | 83 |
| 09:15 | 41 | 17 | 6 | 14 | 2 | 1 | 0 | 81 |
| 09:30 | 36 | 23 | 5 | 8 | 1 | 0 | 0 | 73 |
| 09:45 | 24 | 22 | 6 | 6 | 2 | 0 | 0 | 60 |
| 1 Hr | 150 | 79 | 26 | 35 | 6 | 1 | 0 | 297 |
| 10:00 | 31 | 21 | 8 | 5 | 1 | 1 | 0 | 67 |
| 10:15 | 28 | 12 | 9 | 7 | 2 | 0 | 0 | 58 |
| 10:30 | 25 | 23 | 4 | 4 | 2 | 0 | 0 | 58 |
| 10:45 | 26 | 15 | 5 | 6 | 1 | 0 | 0 | 53 |
| 1 Hr | 110 | 71 | 26 | 22 | 6 | 1 | 0 | 236 |
| 11:00 | 23 | 16 | 8 | 4 | 1 | 1 | 0 | 53 |
| 11:15 | 23 | 19 | 6 | 10 | 0 | 0 | 2 | 60 |
| 11:30 | 13 | 20 | 6 | 6 | 0 | 0 | 1 | 46 |
| 11:45 | 30 | 21 | 6 | 9 | 2 | 0 | 0 | 68 |
| 1 Hr | 89 | 76 | 26 | 29 | 3 | 1 | 3 | 227 |
| 12:00 | 30 | 16 | 9 | 7 | 1 | 0 | 0 | 63 |
| 12:15 | 38 | 22 | 4 | 10 | 1 | 0 | 0 | 75 |
| 12:30 | 45 | 25 | 8 | 4 | 2 | 0 | 0 | 84 |
| 12:45 | 38 | 12 | 8 | 6 | 1 | 0 | 0 | 65 |
| 1 Hr | 151 | 75 | 29 | 27 | 5 | 0 | 0 | 287 |
| 13:00 | 35 | 19 | 13 | 8 | 1 | 0 | 0 | 76 |
| 13:15 | 40 | 21 | 8 | 3 | 2 | 0 | 0 | 74 |
| 13:30 | 42 | 12 | 10 | 6 | 0 | 0 | 0 | 70 |
| 13:45 | 40 | 15 | 8 | 10 | 2 | 0 | 0 | 75 |
| 1 Hr | 157 | 67 | 39 | 27 | 5 | 0 | 0 | 295 |
| 14:00 | 29 | 15 | 6 | 10 | 1 | 1 | 0 | 62 |
| 14:15 | 35 | 21 | 8 | 3 | 1 | 1 | 0 | 69 |
| 14:30 | 23 | 13 | 4 | 11 | 1 | 0 | 0 | 52 |
| 14:45 | 33 | 20 | 6 | 7 | 1 | 1 | 0 | 68 |
| 1 Hr | 120 | 69 | 24 | 31 | 4 | 3 | 0 | 251 |
| 15:00 | 31 | 18 | 14 | 9 | 1 | 0 | 0 | 73 |
| 15:15 | 38 | 15 | 5 | 12 | 2 | 0 | 0 | 72 |
| 15:30 | 43 | 23 | 9 | 11 | 1 | 0 | 0 | 87 |
| 15:45 | 28 | 22 | 7 | 5 | 2 | 0 | 2 | 66 |
| 1 Hr | 140 | 78 | 35 | 37 | 6 | 0 | 2 | 298 |
| 16:00 | 28 | 24 | 10 | 12 | 1 | 1 | 1 | 77 |
| 16:15 | 36 | 19 | 5 | 10 | 1 | 0 | 0 | 71 |
| 16:30 | 33 | 15 | 3 | 13 | 0 | 2 | 1 | 67 |
| 16:45 | 51 | 17 | 6 | 9 | 2 | 0 | 0 | 85 |
| 1 Hr | 148 | 75 | 24 | 44 | 4 | 3 | 2 | 300 |
| 17:00 | 61 | 16 | 7 | 8 | 1 | 1 | 1 | 95 |
| 17:15 | 47 | 16 | 4 | 5 | 1 | 2 | 1 | 76 |
| 17:30 | 54 | 14 | 7 | 6 | 1 | 0 | 3 | 85 |
| 17:45 | 49 | 8 | 9 | 5 | 2 | 1 | 1 | 75 |
| 1 Hr | 211 | 54 | 27 | 24 | 5 | 4 | 6 | 331 |
| 18:00 | 35 | 6 | 5 | 1 | 3 | 1 | 3 | 54 |
| 18:15 | 33 | 11 | 3 | 5 | 2 | 1 | 1 | 56 |
| 18:30 | 27 | 7 | 3 | 4 | 1 | 1 | 1 | 44 |
| 18:45 | 19 | 6 | 2 | 1 | 1 | 1 | 1 | 31 |
| 1 Hr | 114 | 30 | 13 | 11 | 7 | 4 | 6 | 185 |
| 12 Hrs | 1757 | 832 | 308 | 340 | 59 | 21 | 21 | 3338 |
| Check | | | | | | | | 3338 |
| Total | 1757 | 832 | 308 | 340 | 59 | 21 | 21 | 3338 |
| Check | | | | | | | | 3338 |

| | Origin: Arm D - Kilshane Way (W) | | | | | | | | Origin Totals |
|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | |
| 07:00 | 19 | 3 | 13 | 4 | 1 | 0 | 1 | 41 | 235 |
| 07:15 | 16 | 9 | 8 | 2 | 2 | 0 | 1 | 38 | 263 |
| 07:30 | 9 | 11 | 9 | 3 | 6 | 0 | 0 | 38 | 312 |
| 07:45 | 32 | 11 | 8 | 3 | 0 | 0 | 0 | 54 | 374 |
| 1 Hr | 76 | 34 | 38 | 12 | 9 | 0 | 2 | 171 | 1184 |
| 08:00 | 37 | 9 | 16 | 4 | 0 | 0 | 0 | 66 | 353 |
| 08:15 | 33 | 19 | 10 | 2 | 0 | 0 | 2 | 66 | 379 |
| 08:30 | 27 | 21 | 11 | 3 | 0 | 0 | 0 | 62 | 359 |
| 08:45 | 17 | 16 | 11 | 5 | 0 | 0 | 0 | 49 | 340 |
| 1 Hr | 114 | 65 | 48 | 14 | 0 | 0 | 2 | 243 | 1431 |
| 09:00 | 22 | 22 | 7 | 1 | 0 | 1 | 0 | 53 | 345 |
| 09:15 | 31 | 23 | 8 | 1 | 0 | 0 | 0 | 63 | 339 |
| 09:30 | 26 | 17 | 11 | 4 | 0 | 0 | 0 | 58 | 266 |
| 09:45 | 19 | 25 | 12 | 2 | 0 | 0 | 0 | 58 | 248 |
| 1 Hr | 98 | 87 | 38 | 8 | 0 | 1 | 0 | 232 | 1198 |
| 10:00 | 25 | 16 | 6 | 4 | 0 | 0 | 0 | 51 | 234 |
| 10:15 | 31 | 22 | 6 | 4 | 0 | 0 | 0 | 63 | 249 |
| 10:30 | 20 | 25 | 8 | 3 | 0 | 0 | 1 | 57 | 247 |
| 10:45 | 32 | 16 | 7 | 5 | 0 | 0 | 0 | 60 | 233 |
| 1 Hr | 108 | 79 | 27 | 16 | 0 | 0 | 1 | 231 | 963 |
| 11:00 | 29 | 19 | 11 | 2 | 0 | 0 | 0 | 61 | 244 |
| 11:15 | 31 | 22 | 5 | 4 | 0 | 0 | 0 | 62 | 237 |
| 11:30 | 32 | 11 | 13 | 1 | 0 | 2 | 0 | 59 | 245 |
| 11:45 | 31 | 23 | 2 | 5 | 1 | 0 | 1 | 63 | 262 |
| 1 Hr | 123 | 75 | 31 | 12 | 1 | 2 | 1 | 245 | 988 |
| 12:00 | 41 | 28 | 14 | 5 | 0 | 0 | 0 | 88 | 274 |
| 12:15 | 32 | 14 | 10 | 3 | 0 | 0 | 0 | 59 | 257 |
| 12:30 | 46 | 24 | 11 | 0 | 0 | 1 | 0 | 82 | 303 |
| 12:45 | 45 | 26 | 5 | 4 | 0 | 0 | 1 | 81 | 283 |
| 1 Hr | 164 | 92 | 40 | 12 | 0 | 1 | 1 | 310 | 1117 |
| 13:00 | 47 | 10 | 9 | 0 | 0 | 1 | 0 | 67 | 316 |
| 13:15 | 56 | 8 | 5 | 4 | 0 | 1 | 0 | 74 | 309 |
| 13:30 | 37 | 16 | 5 | 1 | 0 | 0 | 0 | 59 | 288 |
| 13:45 | 45 | 14 | 9 | 1 | 1 | 0 | 0 | 70 | 284 |
| 1 Hr | 185 | 48 | 28 | 6 | 1 | 2 | 0 | 270 | 1197 |
| 14:00 | 45 | 14 | 9 | 4 | 0 | 0 | 0 | 72 | 281 |
| 14:15 | 42 | 14 | 7 | 0 | 0 | 0 | 0 | 63 | 285 |
| 14:30 | 36 | 19 | 6 | 1 | 0 | 1 | 0 | 63 | 251 |
| 14:45 | 33 | 20 | 8 | 1 | 0 | 0 | 0 | 62 | 311 |
| 1 Hr | 156 | 67 | 30 | 6 | 0 | 1 | 0 | 260 | 1128 |
| 15:00 | 36 | 10 | 6 | 2 | 0 | 1 | 0 | 55 | 286 |
| 15:15 | 48 | 14 | 10 | 1 | 0 | 0 | 0 | 73 | 278 |
| 15:30 | 46 | 19 | 3 | 3 | 0 | 1 | 0 | 72 | 337 |
| 15:45 | 68 | 26 | 10 | 4 | 0 | 1 | 1 | 110 | 318 |
| 1 Hr | 198 | 69 | 29 | 10 | 0 | 3 | 1 | 310 | 1219 |
| 16:00 | 67 | 24 | 5 | 5 | 1 | 0 | 0 | 102 | 332 |
| 16:15 | 71 | 22 | 3 | 2 | 0 | 0 | 0 | 98 | 325 |
| 16:30 | 82 | 24 | 3 | 2 | 0 | 0 | 0 | 111 | 325 |
| 16:45 | 76 | 15 | 1 | 2 | 0 | 0 | 0 | 94 | 375 |
| 1 Hr | 296 | 85 | 12 | 11 | 1 | 0 | 0 | 405 | 1357 |
| 17:00 | 98 | 23 | 3 | 1 | 0 | 1 | 0 | 126 | 380 |
| 17:15 | 83 | 9 | 6 | 2 | 0 | 1 | 0 | 101 | 383 |
| 17:30 | 113 | 17 | 2 | 3 | 0 | 1 | 1 | 137 | 419 |
| 17:45 | 115 | 10 | 1 | 1 | 0 | 0 | 0 | 127 | 406 |
| 1 Hr | 409 | 59 | 12 | 7 | 0 | 3 | 1 | 491 | 1588 |
| 18:00 | 99 | 5 | 5 | 0 | 0 | 1 | 1 | 111 | 371 |
| 18:15 | 52 | 4 | 0 | 1 | 0 | 1 | 2 | 60 | 275 |
| 18:30 | 48 | 8 | 0 | 0 | 0 | 0 | 1 | 57 | 236 |
| 18:45 | 39 | 6 | 1 | 0 | 0 | 0 | 0 | 46 | 181 |
| 1 Hr | 238 | 23 | 6 | 1 | 0 | 2 | 4 | 274 | 1063 |
| 12 Hrs | 2165 | 783 | 339 | 115 | 12 | 15 | 13 | 3442 | 14433 |
| Check | | | | | | | | 3442 | 14433 |
| Total | 2165 | 783 | 339 | 115 | 12 | 15 | 13 | 3442 | 14433 |
| Check | | | | | | | | 3442 | 14433 |

DESTINATION SUMMARY

| | Destination: Arm A - R135 (N) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 14 | 6 | 4 | 5 | 0 | 0 | 0 | 29 |
| 07:15 | 16 | 6 | 1 | 2 | 1 | 0 | 0 | 26 |
| 07:30 | 17 | 3 | 0 | 6 | 3 | 0 | 0 | 29 |
| 07:45 | 22 | 8 | 0 | 7 | 0 | 0 | 1 | 38 |
| 1 Hr | 69 | 23 | 5 | 20 | 4 | 0 | 1 | 122 |
| 08:00 | 20 | 12 | 1 | 5 | 1 | 0 | 2 | 41 |
| 08:15 | 24 | 8 | 1 | 6 | 1 | 2 | 0 | 42 |
| 08:30 | 22 | 7 | 3 | 2 | 0 | 1 | 0 | 35 |
| 08:45 | 15 | 8 | 1 | 5 | 2 | 0 | 0 | 31 |
| 1 Hr | 81 | 35 | 6 | 18 | 4 | 3 | 2 | 149 |
| 09:00 | 16 | 8 | 4 | 5 | 1 | 0 | 0 | 34 |
| 09:15 | 19 | 10 | 6 | 12 | 1 | 0 | 0 | 48 |
| 09:30 | 20 | 4 | 5 | 3 | 0 | 0 | 0 | 32 |
| 09:45 | 15 | 11 | 4 | 4 | 2 | 0 | 0 | 36 |
| 1 Hr | 70 | 33 | 19 | 24 | 4 | 0 | 0 | 150 |
| 10:00 | 23 | 12 | 2 | 6 | 2 | 0 | 0 | 45 |
| 10:15 | 34 | 5 | 5 | 5 | 1 | 0 | 0 | 50 |
| 10:30 | 32 | 16 | 2 | 5 | 2 | 0 | 0 | 57 |
| 10:45 | 27 | 7 | 3 | 4 | 2 | 0 | 0 | 43 |
| 1 Hr | 116 | 40 | 12 | 20 | 7 | 0 | 0 | 195 |
| 11:00 | 23 | 11 | 2 | 2 | 4 | 0 | 0 | 42 |
| 11:15 | 19 | 8 | 4 | 5 | 1 | 0 | 2 | 39 |
| 11:30 | 18 | 13 | 4 | 5 | 1 | 0 | 0 | 41 |
| 11:45 | 35 | 7 | 3 | 8 | 3 | 1 | 1 | 58 |
| 1 Hr | 95 | 39 | 13 | 20 | 9 | 1 | 3 | 180 |
| 12:00 | 39 | 7 | 1 | 5 | 1 | 0 | 0 | 53 |
| 12:15 | 48 | 11 | 3 | 6 | 1 | 1 | 0 | 70 |
| 12:30 | 44 | 12 | 7 | 5 | 4 | 0 | 1 | 73 |
| 12:45 | 42 | 12 | 6 | 5 | 1 | 0 | 0 | 66 |
| 1 Hr | 173 | 42 | 17 | 21 | 7 | 1 | 1 | 262 |
| 13:00 | 52 | 7 | 4 | 5 | 3 | 0 | 0 | 71 |
| 13:15 | 43 | 10 | 2 | 2 | 1 | 0 | 0 | 58 |
| 13:30 | 51 | 10 | 5 | 4 | 0 | 0 | 0 | 70 |
| 13:45 | 37 | 10 | 6 | 7 | 2 | 0 | 0 | 62 |
| 1 Hr | 183 | 37 | 17 | 18 | 6 | 0 | 0 | 261 |
| 14:00 | 34 | 7 | 2 | 8 | 1 | 0 | 0 | 52 |
| 14:15 | 38 | 12 | 4 | 2 | 1 | 1 | 0 | 58 |
| 14:30 | 25 | 6 | 1 | 7 | 1 | 0 | 0 | 40 |
| 14:45 | 50 | 11 | 4 | 7 | 2 | 1 | 0 | 75 |
| 1 Hr | 147 | 36 | 11 | 24 | 5 | 2 | 0 | 225 |
| 15:00 | 33 | 10 | 5 | 5 | 1 | 0 | 0 | 54 |
| 15:15 | 42 | 11 | 1 | 6 | 1 | 0 | 0 | 61 |
| 15:30 | 46 | 10 | 2 | 7 | 4 | 0 | 0 | 69 |
| 15:45 | 45 | 9 | 3 | 9 | 1 | 0 | 4 | 71 |
| 1 Hr | 166 | 40 | 11 | 27 | 7 | 0 | 4 | 255 |
| 16:00 | 37 | 16 | 6 | 10 | 1 | 1 | 0 | 71 |
| 16:15 | 50 | 19 | 2 | 6 | 1 | 0 | 0 | 78 |
| 16:30 | 39 | 12 | 3 | 9 | 1 | 1 | 1 | 66 |
| 16:45 | 63 | 17 | 3 | 5 | 2 | 0 | 0 | 90 |
| 1 Hr | 189 | 64 | 14 | 30 | 5 | 2 | 1 | 305 |
| 17:00 | 49 | 18 | 5 | 3 | 1 | 1 | 2 | 79 |
| 17:15 | 59 | 9 | 3 | 5 | 0 | 0 | 1 | 77 |
| 17:30 | 71 | 14 | 1 | 1 | 1 | 0 | 3 | 91 |
| 17:45 | 82 | 4 | 5 | 3 | 2 | 1 | 1 | 98 |
| 1 Hr | 261 | 45 | 14 | 12 | 4 | 2 | 7 | 345 |
| 18:00 | 73 | 10 | 2 | 3 | 3 | 1 | 4 | 96 |
| 18:15 | 65 | 12 | 0 | 1 | 2 | 3 | 0 | 83 |
| 18:30 | 41 | 12 | 1 | 2 | 1 | 0 | 1 | 58 |
| 18:45 | 35 | 9 | 2 | 3 | 2 | 2 | 1 | 54 |
| 1 Hr | 214 | 43 | 5 | 9 | 8 | 6 | 6 | 291 |
| 12 Hrs | 1764 | 477 | 144 | 243 | 70 | 17 | 25 | 2740 |
| Check | | | | | | | | 2740 |
| Total | 1764 | 477 | 144 | 243 | 70 | 17 | 25 | 2740 |
| Check | | | | | | | | 2740 |

| | Destination: Arm B - Kilshane Way (E) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 45 | 13 | 7 | 2 | 2 | 0 | 0 | 69 |
| 07:15 | 47 | 12 | 7 | 3 | 2 | 0 | 1 | 72 |
| 07:30 | 60 | 21 | 7 | 6 | 9 | 1 | 0 | 104 |
| 07:45 | 61 | 27 | 4 | 9 | 0 | 0 | 0 | 101 |
| 1 Hr | 213 | 73 | 25 | 20 | 13 | 1 | 1 | 346 |
| 08:00 | 76 | 7 | 11 | 6 | 1 | 0 | 0 | 101 |
| 08:15 | 94 | 18 | 5 | 1 | 0 | 0 | 2 | 120 |
| 08:30 | 75 | 27 | 4 | 3 | 0 | 0 | 0 | 109 |
| 08:45 | 50 | 17 | 7 | 8 | 0 | 0 | 0 | 82 |
| 1 Hr | 295 | 69 | 27 | 18 | 1 | 0 | 2 | 412 |
| 09:00 | 55 | 19 | 6 | 3 | 3 | 1 | 0 | 87 |
| 09:15 | 53 | 22 | 4 | 4 | 0 | 1 | 0 | 84 |
| 09:30 | 37 | 12 | 8 | 5 | 1 | 0 | 0 | 63 |
| 09:45 | 46 | 21 | 3 | 4 | 1 | 0 | 0 | 75 |
| 1 Hr | 191 | 74 | 21 | 16 | 5 | 2 | 0 | 309 |
| 10:00 | 37 | 12 | 6 | 4 | 1 | 1 | 0 | 61 |
| 10:15 | 38 | 14 | 8 | 3 | 0 | 0 | 0 | 63 |
| 10:30 | 33 | 14 | 10 | 5 | 1 | 0 | 1 | 64 |
| 10:45 | 36 | 12 | 7 | 4 | 0 | 1 | 0 | 60 |
| 1 Hr | 144 | 52 | 31 | 16 | 2 | 2 | 1 | 248 |
| 11:00 | 41 | 19 | 11 | 6 | 1 | 0 | 0 | 78 |
| 11:15 | 41 | 20 | 9 | 4 | 0 | 0 | 0 | 74 |
| 11:30 | 37 | 11 | 10 | 2 | 1 | 1 | 0 | 62 |
| 11:45 | 42 | 21 | 3 | 6 | 1 | 0 | 1 | 74 |
| 1 Hr | 161 | 71 | 33 | 18 | 3 | 1 | 1 | 288 |
| 12:00 | 48 | 20 | 11 | 3 | 1 | 0 | 0 | 83 |
| 12:15 | 44 | 13 | 6 | 8 | 1 | 0 | 0 | 72 |
| 12:30 | 69 | 26 | 11 | 1 | 1 | 1 | 0 | 109 |
| 12:45 | 53 | 16 | 4 | 6 | 1 | 0 | 1 | 81 |
| 1 Hr | 214 | 75 | 32 | 18 | 4 | 1 | 1 | 345 |
| 13:00 | 59 | 16 | 8 | 3 | 2 | 1 | 0 | 89 |
| 13:15 | 81 | 10 | 14 | 4 | 1 | 1 | 0 | 111 |
| 13:30 | 55 | 10 | 5 | 0 | 0 | 0 | 1 | 71 |
| 13:45 | 63 | 15 | 4 | 4 | 1 | 0 | 0 | 87 |
| 1 Hr | 258 | 51 | 31 | 11 | 4 | 2 | 1 | 358 |
| 14:00 | 56 | 11 | 8 | 7 | 2 | 0 | 1 | 85 |
| 14:15 | 65 | 18 | 8 | 6 | 1 | 0 | 0 | 98 |
| 14:30 | 57 | 19 | 7 | 1 | 1 | 1 | 0 | 86 |
| 14:45 | 52 | 22 | 6 | 4 | 0 | 0 | 2 | 86 |
| 1 Hr | 230 | 70 | 29 | 18 | 4 | 1 | 3 | 355 |
| 15:00 | 57 | 17 | 6 | 4 | 1 | 0 | 0 | 85 |
| 15:15 | 61 | 14 | 4 | 4 | 0 | 0 | 0 | 83 |
| 15:30 | 73 | 22 | 3 | 6 | 0 | 1 | 0 | 105 |
| 15:45 | 70 | 26 | 9 | 4 | 0 | 2 | 2 | 113 |
| 1 Hr | 261 | 79 | 22 | 18 | 1 | 3 | 2 | 386 |
| 16:00 | 65 | 24 | 2 | 4 | 1 | 0 | 0 | 96 |
| 16:15 | 77 | 24 | 4 | 7 | 1 | 1 | 0 | 114 |
| 16:30 | 100 | 20 | 3 | 7 | 0 | 1 | 0 | 131 |
| 16:45 | 98 | 14 | 1 | 2 | 1 | 0 | 0 | 116 |
| 1 Hr | 340 | 82 | 10 | 20 | 3 | 2 | 0 | 457 |
| 17:00 | 113 | 17 | 3 | 6 | 1 | 1 | 1 | 142 |
| 17:15 | 117 | 12 | 4 | 1 | 1 | 2 | 0 | 137 |
| 17:30 | 136 | 18 | 4 | 7 | 0 | 0 | 1 | 166 |
| 17:45 | 121 | 8 | 2 | 1 | 1 | 0 | 0 | 133 |
| 1 Hr | 487 | 55 | 13 | 15 | 3 | 3 | 2 | 578 |
| 18:00 | 99 | 4 | 7 | 1 | 1 | 2 | 1 | 115 |
| 18:15 | 69 | 7 | 0 | 2 | 0 | 3 | 2 | 83 |
| 18:30 | 72 | 12 | 0 | 4 | 1 | 1 | 1 | 91 |
| 18:45 | 49 | 6 | 2 | 1 | 1 | 0 | 0 | 59 |
| 1 Hr | 289 | 29 | 9 | 8 | 3 | 6 | 4 | 348 |
| 12 Hrs | 3083 | 780 | 283 | 196 | 46 | 24 | 18 | 4430 |
| Check | | | | | | | | 4430 |
| Total | 3083 | 780 | 283 | 196 | 46 | 24 | 18 | 4430 |
| Check | | | | | | | | 4430 |

| | Destination: Arm C - R135 (S) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total |
| 07:00 | 37 | 7 | 8 | 4 | 0 | 2 | 2 | 60 |
| 07:15 | 29 | 12 | 9 | 5 | 3 | 0 | 1 | 59 |
| 07:30 | 39 | 13 | 9 | 8 | 2 | 1 | 2 | 74 |
| 07:45 | 45 | 19 | 6 | 4 | 3 | 0 | 1 | 78 |
| 1 Hr | 150 | 51 | 32 | 21 | 8 | 3 | 6 | 271 |
| 08:00 | 33 | 19 | 9 | 4 | 1 | 0 | 4 | 70 |
| 08:15 | 35 | 14 | 9 | 6 | 0 | 1 | 1 | 66 |
| 08:30 | 17 | 17 | 9 | 4 | 1 | 0 | 1 | 49 |
| 08:45 | 26 | 11 | 7 | 8 | 2 | 0 | 0 | 54 |
| 1 Hr | 111 | 61 | 34 | 22 | 4 | 1 | 6 | 239 |
| 09:00 | 27 | 21 | 9 | 4 | 1 | 0 | 1 | 63 |
| 09:15 | 40 | 17 | 7 | 7 | 1 | 0 | 1 | 73 |
| 09:30 | 34 | 20 | 6 | 10 | 1 | 0 | 0 | 71 |
| 09:45 | 24 | 20 | 12 | 6 | 0 | 0 | 0 | 62 |
| 1 Hr | 125 | 78 | 34 | 27 | 3 | 0 | 2 | 269 |
| 10:00 | 23 | 18 | 5 | 5 | 1 | 0 | 1 | 53 |
| 10:15 | 33 | 22 | 2 | 10 | 1 | 0 | 0 | 68 |
| 10:30 | 25 | 20 | 4 | 4 | 1 | 0 | 0 | 54 |
| 10:45 | 23 | 18 | 3 | 16 | 1 | 0 | 0 | 61 |
| 1 Hr | 104 | 78 | 14 | 35 | 4 | 0 | 1 | 236 |
| 11:00 | 32 | 14 | 5 | 4 | 0 | 0 | 1 | 56 |
| 11:15 | 23 | 17 | 4 | 6 | 1 | 0 | 0 | 51 |
| 11:30 | 36 | 17 | 10 | 2 | 1 | 1 | 0 | 67 |
| 11:45 | 28 | 18 | 6 | 9 | 0 | 0 | 0 | 61 |
| 1 Hr | 119 | 66 | 25 | 21 | 2 | 1 | 1 | 235 |
| 12:00 | 33 | 14 | 8 | 10 | 1 | 0 | 0 | 66 |
| 12:15 | 29 | 15 | 8 | 4 | 1 | 0 | 1 | 58 |
| 12:30 | 31 | 14 | 9 | 2 | 0 | 0 | 0 | 56 |
| 12:45 | 44 | 22 | 5 | 3 | 1 | 0 | 0 | 75 |
| 1 Hr | 137 | 65 | 30 | 19 | 3 | 0 | 1 | 255 |
| 13:00 | 40 | 9 | 5 | 8 | 1 | 0 | 0 | 63 |
| 13:15 | 40 | 14 | 4 | 8 | 1 | 1 | 0 | 68 |
| 13:30 | 32 | 20 | 4 | 9 | 1 | 1 | 0 | 67 |
| 13:45 | 37 | 15 | 6 | 5 | 0 | 0 | 0 | 63 |
| 1 Hr | 149 | 58 | 19 | 30 | 3 | 2 | 0 | 261 |
| 14:00 | 37 | 16 | 7 | 8 | 1 | 0 | 0 | 69 |
| 14:15 | 37 | 11 | 6 | 2 | 1 | 2 | 0 | 59 |
| 14:30 | 33 | 22 | 6 | 5 | 1 | 0 | 0 | 67 |
| 14:45 | 33 | 18 | 7 | 10 | 0 | 1 | 0 | 69 |
| 1 Hr | 140 | 67 | 26 | 25 | 3 | 3 | 0 | 264 |
| 15:00 | 31 | 9 | 3 | 8 | 2 | 1 | 0 | 54 |
| 15:15 | 35 | 8 | 8 | 6 | 0 | 0 | 0 | 57 |
| 15:30 | 40 | 17 | 1 | 8 | 1 | 0 | 0 | 67 |
| 15:45 | 43 | 15 | 8 | 3 | 1 | 0 | 0 | 70 |
| 1 Hr | 149 | 49 | 20 | 25 | 4 | 1 | 0 | 248 |
| 16:00 | 47 | 21 | 3 | 8 | 2 | 0 | 0 | 81 |
| 16:15 | 41 | 10 | 6 | 7 | 0 | 0 | 0 | 64 |
| 16:30 | 43 | 21 | 1 | 2 | 1 | 3 | 0 | 71 |
| 16:45 | 52 | 10 | 3 | 6 | 0 | 0 | 1 | 72 |
| 1 Hr | 183 | 62 | 13 | 23 | 3 | 3 | 1 | 288 |
| 17:00 | 61 | 16 | 1 | 4 | 0 | 0 | 1 | 83 |
| 17:15 | 64 | 14 | 2 | 4 | 1 | 1 | 1 | 87 |
| 17:30 | 67 | 14 | 3 | 4 | 1 | 2 | 1 | 92 |
| 17:45 | 78 | 10 | 3 | 6 | 1 | 0 | 1 | 99 |
| 1 Hr | 270 | 54 | 9 | 18 | 3 | 3 | 4 | 361 |
| 18:00 | 67 | 6 | 2 | 5 | 2 | 0 | 2 | 84 |
| 18:15 | 36 | 7 | 2 | 3 | 0 | 0 | 1 | 49 |
| 18:30 | 41 | 5 | 0 | 1 | 0 | 1 | 0 | 48 |
| 18:45 | 28 | 5 | 0 | 0 | 2 | 0 | 0 | 35 |
| 1 Hr | 172 | 23 | 4 | 9 | 4 | 1 | 3 | 216 |
| 12 Hrs | 1809 | 712 | 260 | 275 | 44 | 18 | 25 | 3143 |
| Check | | | | | | | | 3143 |
| Total | 1809 | 712 | 260 | 275 | 44 | 18 | 25 | 3143 |
| Check | | | | | | | | 3143 |

| | Destination: Arm D - Kilshane Way (W) | | | | | | | | Dest Totals |
|---|---|---|---|---|---|---|---|---|---|
| | CAR | LGV | OGV1 | OGV2 | PSV | MCL | PCL | Total | |
| 07:00 | 58 | 12 | 6 | 1 | 0 | 0 | 0 | 77 | 235 |
| 07:15 | 77 | 20 | 6 | 3 | 0 | 0 | 0 | 106 | 263 |
| 07:30 | 76 | 19 | 6 | 3 | 0 | 0 | 1 | 105 | 312 |
| 07:45 | 110 | 41 | 4 | 1 | 0 | 0 | 1 | 157 | 374 |
| 1 Hr | 321 | 92 | 22 | 8 | 0 | 0 | 2 | 445 | 1184 |
| 08:00 | 109 | 24 | 4 | 3 | 0 | 0 | 1 | 141 | 353 |
| 08:15 | 119 | 22 | 8 | 2 | 0 | 0 | 0 | 151 | 379 |
| 08:30 | 125 | 30 | 8 | 2 | 0 | 1 | 0 | 166 | 359 |
| 08:45 | 128 | 25 | 11 | 6 | 0 | 3 | 0 | 173 | 340 |
| 1 Hr | 481 | 101 | 31 | 13 | 0 | 4 | 1 | 631 | 1431 |
| 09:00 | 118 | 24 | 12 | 4 | 1 | 0 | 2 | 161 | 345 |
| 09:15 | 94 | 27 | 6 | 4 | 2 | 0 | 1 | 134 | 339 |
| 09:30 | 55 | 32 | 8 | 3 | 2 | 0 | 0 | 100 | 266 |
| 09:45 | 43 | 22 | 8 | 1 | 0 | 1 | 0 | 75 | 248 |
| 1 Hr | 310 | 105 | 34 | 12 | 5 | 1 | 3 | 470 | 1198 |
| 10:00 | 41 | 18 | 14 | 2 | 0 | 0 | 0 | 75 | 234 |
| 10:15 | 42 | 12 | 9 | 3 | 2 | 0 | 0 | 68 | 249 |
| 10:30 | 35 | 28 | 5 | 3 | 1 | 0 | 0 | 72 | 247 |
| 10:45 | 43 | 18 | 6 | 2 | 0 | 0 | 0 | 69 | 233 |
| 1 Hr | 161 | 76 | 34 | 10 | 3 | 0 | 0 | 284 | 963 |
| 11:00 | 32 | 20 | 10 | 3 | 1 | 1 | 1 | 68 | 244 |
| 11:15 | 36 | 16 | 14 | 6 | 0 | 1 | 0 | 73 | 237 |
| 11:30 | 38 | 27 | 7 | 2 | 0 | 0 | 1 | 75 | 245 |
| 11:45 | 38 | 18 | 10 | 3 | 0 | 0 | 0 | 69 | 262 |
| 1 Hr | 144 | 81 | 41 | 14 | 1 | 2 | 2 | 285 | 988 |
| 12:00 | 31 | 24 | 14 | 2 | 1 | 0 | 0 | 72 | 274 |
| 12:15 | 26 | 21 | 5 | 3 | 1 | 1 | 0 | 57 | 257 |
| 12:30 | 37 | 19 | 7 | 2 | 0 | 0 | 0 | 65 | 303 |
| 12:45 | 36 | 13 | 10 | 2 | 0 | 0 | 0 | 61 | 283 |
| 1 Hr | 130 | 77 | 36 | 9 | 2 | 1 | 0 | 255 | 1117 |
| 13:00 | 51 | 21 | 19 | 2 | 0 | 0 | 0 | 93 | 316 |
| 13:15 | 44 | 21 | 5 | 1 | 0 | 1 | 0 | 72 | 309 |
| 13:30 | 43 | 25 | 10 | 2 | 0 | 0 | 0 | 80 | 288 |
| 13:45 | 50 | 12 | 7 | 3 | 0 | 0 | 0 | 72 | 284 |
| 1 Hr | 188 | 79 | 41 | 8 | 0 | 1 | 0 | 317 | 1197 |
| 14:00 | 45 | 20 | 7 | 2 | 0 | 1 | 0 | 75 | 281 |
| 14:15 | 46 | 17 | 6 | 0 | 1 | 0 | 0 | 70 | 285 |
| 14:30 | 36 | 15 | 2 | 4 | 0 | 1 | 0 | 58 | 251 |
| 14:45 | 45 | 23 | 11 | 2 | 0 | 0 | 0 | 81 | 311 |
| 1 Hr | 172 | 75 | 26 | 8 | 1 | 2 | 0 | 284 | 1128 |
| 15:00 | 48 | 26 | 16 | 3 | 0 | 0 | 0 | 93 | 286 |
| 15:15 | 46 | 15 | 10 | 4 | 1 | 1 | 0 | 77 | 278 |
| 15:30 | 54 | 24 | 14 | 4 | 0 | 0 | 0 | 96 | 337 |
| 15:45 | 27 | 25 | 9 | 1 | 1 | 1 | 0 | 64 | 318 |
| 1 Hr | 175 | 90 | 49 | 12 | 2 | 2 | 0 | 330 | 1219 |
| 16:00 | 44 | 21 | 14 | 4 | 0 | 0 | 1 | 84 | 332 |
| 16:15 | 39 | 17 | 10 | 3 | 0 | 0 | 0 | 69 | 325 |
| 16:30 | 35 | 15 | 4 | 3 | 0 | 0 | 0 | 57 | 325 |
| 16:45 | 62 | 16 | 11 | 6 | 1 | 1 | 0 | 97 | 375 |
| 1 Hr | 180 | 69 | 39 | 16 | 1 | 1 | 1 | 307 | 1357 |
| 17:00 | 52 | 13 | 5 | 6 | 0 | 0 | 0 | 76 | 380 |
| 17:15 | 57 | 18 | 5 | 2 | 0 | 0 | 0 | 82 | 383 |
| 17:30 | 48 | 8 | 9 | 3 | 1 | 0 | 1 | 70 | 419 |
| 17:45 | 54 | 12 | 5 | 4 | 1 | 0 | 0 | 76 | 406 |
| 1 Hr | 211 | 51 | 24 | 15 | 2 | 0 | 1 | 304 | 1588 |
| 18:00 | 59 | 8 | 4 | 2 | 0 | 1 | 2 | 76 | 371 |
| 18:15 | 37 | 9 | 5 | 3 | 5 | 0 | 1 | 60 | 275 |
| 18:30 | 23 | 9 | 4 | 3 | 0 | 0 | 0 | 39 | 236 |
| 18:45 | 23 | 6 | 1 | 0 | 3 | 0 | 0 | 33 | 181 |
| 1 Hr | 142 | 32 | 14 | 8 | 8 | 1 | 3 | 208 | 1063 |
| 12 Hrs | 2615 | 928 | 391 | 133 | 25 | 15 | 13 | 4120 | 14433 |
| Check | | | | | | | | 4120 | 14433 |
| Total | 2615 | 928 | 391 | 133 | 25 | 15 | 13 | 4120 | 14433 |
| Check | | | | | | | | 4120 | 14433 |

# APPENDIX 13-B
# TRAFFIC FLOW SHEETS

## R135 / N2 Slip Road Priority Junction - AM Peak Hour

**2016 Existing AM Peak**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 58 | **58** |
| N2 Slip Road | 396 | 0 | 128 | **524** |
| R135 (South) | 86 | 0 | 0 | **86** |
| **Totals** | **482** | **0** | **186** | **668** |

**2017 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 58 | **58** |
| N2 Slip Road | 399 | 0 | 129 | **528** |
| R135 (South) | 87 | 0 | 0 | **87** |
| **Totals** | **485** | **0** | **187** | **673** |

**2017 AM Peak Development Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | **1** |
| N2 Slip Road | 0 | 0 | 2 | **2** |
| R135 (South) | 3 | 0 | 0 | **3** |
| **Totals** | **3** | **0** | **3** | **6** |

**2017 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 59 | **59** |
| N2 Slip Road | 399 | 0 | 131 | **530** |
| R135 (South) | 90 | 0 | 0 | **90** |
| **Totals** | **488** | **0** | **190** | **679** |

**2022 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 61 | **61** |
| N2 Slip Road | 413 | 0 | 134 | **547** |
| R135 (South) | 90 | 0 | 0 | **90** |
| **Totals** | **503** | **0** | **194** | **697** |

**2022 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 62 | **62** |
| N2 Slip Road | 413 | 0 | 136 | **549** |
| R135 (South) | 93 | 0 | 0 | **93** |
| **Totals** | **506** | **0** | **197** | **703** |

**2022 AM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| N2 Slip Road | 0 | 0 | 22 | **22** |
| R135 (South) | 44 | 0 | 0 | **44** |
| **Totals** | **44** | **0** | **44** | **88** |

**2022 AM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 84 | **84** |
| N2 Slip Road | 413 | 0 | 158 | **571** |
| R135 (South) | 137 | 0 | 0 | **137** |
| **Totals** | **550** | **0** | **241** | **791** |

**2032 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 63 | **63** |
| N2 Slip Road | 430 | 0 | 139 | **569** |
| R135 (South) | 93 | 0 | 0 | **93** |
| **Totals** | **523** | **0** | **202** | **725** |

**2032 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 64 | **64** |
| N2 Slip Road | 430 | 0 | 141 | **571** |
| R135 (South) | 96 | 0 | 0 | **96** |
| **Totals** | **526** | **0** | **205** | **731** |

**2032 AM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | **16** |
| N2 Slip Road | 0 | 0 | 16 | **16** |
| R135 (South) | 32 | 0 | 0 | **32** |
| **Totals** | **32** | **0** | **32** | **64** |

**2032 AM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 80 | **80** |
| N2 Slip Road | 430 | 0 | 157 | **587** |
| R135 (South) | 128 | 0 | 0 | **128** |
| **Totals** | **558** | **0** | **237** | **795** |

## R135 / N2 Slip Road Priority Junction - PM Peak Hour

**2016 Existing PM Peak**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 20 | **20** |
| N2 Slip Road | 308 | 0 | 20 | **328** |
| R135 (South) | 116 | 0 | 0 | **116** |
| **Totals** | **424** | **0** | **40** | **464** |

**2017 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 20 | **20** |
| N2 Slip Road | 310 | 0 | 20 | **330** |
| R135 (South) | 117 | 0 | 0 | **117** |
| **Totals** | **427** | **0** | **40** | **467** |

**2017 PM Peak Development Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | **1** |
| N2 Slip Road | 0 | 0 | 1 | **1** |
| R135 (South) | 3 | 0 | 0 | **3** |
| **Totals** | **3** | **0** | **2** | **5** |

**2017 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 21 | **21** |
| N2 Slip Road | 310 | 0 | 21 | **331** |
| R135 (South) | 120 | 0 | 0 | **120** |
| **Totals** | **430** | **0** | **42** | **472** |

**2022 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 21 | **21** |
| N2 Slip Road | 321 | 0 | 21 | **342** |
| R135 (South) | 121 | 0 | 0 | **121** |
| **Totals** | **442** | **0** | **42** | **484** |

**2022 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| N2 Slip Road | 321 | 0 | 22 | **343** |
| R135 (South) | 124 | 0 | 0 | **124** |
| **Totals** | **445** | **0** | **44** | **489** |

**2022 PM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| N2 Slip Road | 0 | 0 | 22 | **22** |
| R135 (South) | 44 | 0 | 0 | **44** |
| **Totals** | **44** | **0** | **44** | **88** |

**2022 PM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 44 | **44** |
| N2 Slip Road | 321 | 0 | 44 | **365** |
| R135 (South) | 168 | 0 | 0 | **168** |
| **Totals** | **489** | **0** | **88** | **577** |

**2032 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| N2 Slip Road | 334 | 0 | 22 | **356** |
| R135 (South) | 126 | 0 | 0 | **126** |
| **Totals** | **460** | **0** | **43** | **504** |

**2032 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 23 | **23** |
| N2 Slip Road | 334 | 0 | 23 | **357** |
| R135 (South) | 129 | 0 | 0 | **129** |
| **Totals** | **463** | **0** | **45** | **509** |

**2032 PM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | **16** |
| N2 Slip Road | 0 | 0 | 16 | **16** |
| R135 (South) | 32 | 0 | 0 | **32** |
| **Totals** | **32** | **0** | **32** | **64** |

**2032 PM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 39 | **39** |
| N2 Slip Road | 334 | 0 | 39 | **373** |
| R135 (South) | 161 | 0 | 0 | **161** |
| **Totals** | **495** | **0** | **77** | **573** |

## R135 / Elm Road Signalised Junction - AM Peak Hour

**2016 Existing AM Peak**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 230 | 63 | **293** |
| Elm Road | 21 | 0 | 3 | **24** |
| R135 (South) | 319 | 122 | 0 | **441** |
| **Totals** | **340** | **352** | **66** | **758** |

**2016 AM Peak PCU Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 283 | 71 | **354** |
| Elm Road | 22 | 0 | 4 | **26** |
| R135 (South) | 371 | 173 | 0 | **544** |
| **Totals** | **393** | **456** | **75** | **924** |

**2017 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 285 | 72 | **357** |
| Elm Road | 22 | 0 | 4 | **26** |
| R135 (South) | 374 | 174 | 0 | **548** |
| **Totals** | **396** | **459** | **76** | **931** |

**2017 AM Peak Development Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | **1** |
| Elm Road | 0 | 0 | 0 | **0** |
| R135 (South) | 1 | 2 | 0 | **3** |
| **Totals** | **1** | **2** | **1** | **4** |

**2017 AM Peak With Development**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 285 | 73 | **358** |
| Elm Road | 22 | 0 | 4 | **26** |
| R135 (South) | 375 | 176 | 0 | **551** |
| **Totals** | **397** | **461** | **77** | **935** |

**2022 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 295 | 74 | **369** |
| Elm Road | 23 | 0 | 4 | **27** |
| R135 (South) | 387 | 181 | 0 | **568** |
| **Totals** | **410** | **476** | **78** | **964** |

**2022 AM Peak With Development**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 295 | 75 | **370** |
| Elm Road | 23 | 0 | 4 | **27** |
| R135 (South) | 388 | 183 | 0 | **571** |
| **Totals** | **411** | **478** | **79** | **968** |

**2022 AM Peak Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| Elm Road | 0 | 0 | 0 | **0** |
| R135 (South) | 22 | 22 | 0 | **44** |
| **Totals** | **22** | **22** | **22** | **66** |

**2022 AM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 295 | 97 | **392** |
| Elm Road | 23 | 0 | 4 | **27** |
| R135 (South) | 410 | 205 | 0 | **615** |
| **Totals** | **433** | **500** | **101** | **1034** |

**2032 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 307 | 77 | **384** |
| Elm Road | 24 | 0 | 4 | **28** |
| R135 (South) | 403 | 188 | 0 | **591** |
| **Totals** | **427** | **495** | **81** | **1003** |

**2032 AM Peak With Development**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 307 | 78 | **385** |
| Elm Road | 24 | 0 | 4 | **28** |
| R135 (South) | 404 | 190 | 0 | **594** |
| **Totals** | **428** | **497** | **82** | **1007** |

**2032 AM Peak Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | **16** |
| Elm Road | 0 | 0 | 0 | **0** |
| R135 (South) | 16 | 16 | 0 | **32** |
| **Totals** | **16** | **16** | **16** | **48** |

**2032 AM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 307 | 94 | **401** |
| Elm Road | 24 | 0 | 4 | **28** |
| R135 (South) | 420 | 206 | 0 | **626** |
| **Totals** | **444** | **513** | **98** | **1055** |

## R135 / Elm Road Signalised Junction - PM Peak Hour

**2016 Existing PM Peak**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 313 | 21 | **334** |
| Elm Road | 29 | 0 | 2 | **31** |
| R135 (South) | 320 | 144 | 0 | **464** |
| **Totals** | **349** | **457** | **23** | **829** |

**2016 PM Peak PCU Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 337 | 28 | **365** |
| Elm Road | 30 | 0 | 2 | **32** |
| R135 (South) | 378 | 164 | 0 | **542** |
| **Totals** | **408** | **501** | **30** | **939** |

**2017 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 339 | 28 | **368** |
| Elm Road | 30 | 0 | 2 | **32** |
| R135 (South) | 381 | 165 | 0 | **546** |
| **Totals** | **411** | **505** | **30** | **946** |

**2017 PM Peak Development Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | **1** |
| Elm Road | 0 | 0 | 0 | **0** |
| R135 (South) | 1 | 2 | 0 | **3** |
| **Totals** | **1** | **2** | **1** | **4** |

**2017 PM Peak With Development**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 339 | 29 | **369** |
| Elm Road | 30 | 0 | 2 | **32** |
| R135 (South) | 382 | 167 | 0 | **549** |
| **Totals** | **412** | **507** | **31** | **950** |

**2022 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 352 | 29 | **381** |
| Elm Road | 31 | 0 | 2 | **33** |
| R135 (South) | 394 | 171 | 0 | **566** |
| **Totals** | **426** | **523** | **31** | **980** |

**2022 PM Peak With Development**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 352 | 30 | **382** |
| Elm Road | 31 | 0 | 2 | **33** |
| R135 (South) | 395 | 173 | 0 | **569** |
| **Totals** | **427** | **525** | **32** | **984** |

**2022 PM Peak Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| Elm Road | 0 | 0 | 0 | **0** |
| R135 (South) | 22 | 22 | 0 | **44** |
| **Totals** | **22** | **22** | **22** | **66** |

**2022 PM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 352 | 52 | **404** |
| Elm Road | 31 | 0 | 2 | **33** |
| R135 (South) | 417 | 195 | 0 | **613** |
| **Totals** | **449** | **547** | **54** | **1050** |

**2032 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 366 | 30 | **396** |
| Elm Road | 33 | 0 | 2 | **35** |
| R135 (South) | 410 | 178 | 0 | **589** |
| **Totals** | **443** | **544** | **33** | **1020** |

**2032 PM Peak With Development**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 366 | 31 | **397** |
| Elm Road | 33 | 0 | 2 | **35** |
| R135 (South) | 411 | 180 | 0 | **592** |
| **Totals** | **444** | **546** | **34** | **1024** |

**2032 PM Peak Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | **16** |
| Elm Road | 0 | 0 | 0 | **0** |
| R135 (South) | 16 | 16 | 0 | **32** |
| **Totals** | **16** | **16** | **16** | **48** |

**2032 PM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | Elm Road | R135 (South) | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 366 | 47 | **413** |
| Elm Road | 33 | 0 | 2 | **35** |
| R135 (South) | 427 | 196 | 0 | **624** |
| **Totals** | **460** | **562** | **50** | **1072** |

## R135 / L3125 Signalised Junction - AM Peak Hour

**2016 Existing AM Peak**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 219 | 117 | 29 | **365** |
| L3125 (East) | 82 | 0 | 90 | 320 | **492** |
| R135 (South) | 59 | 73 | 0 | 205 | **337** |
| L3125 (West) | 9 | 134 | 81 | 0 | **224** |
| **Totals** | **150** | **426** | **288** | **554** | **1418** |

**2016 AM Peak PCU Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 234 | 137 | 30 | **401** |
| L3125 (East) | 93 | 0 | 101 | 331 | **525** |
| R135 (South) | 77 | 88 | 0 | 224 | **389** |
| L3125 (West) | 11 | 163 | 111 | 0 | **285** |
| **Totals** | **181** | **485** | **349** | **585** | **1600** |

**2017 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 236 | 138 | 30 | **404** |
| L3125 (East) | 94 | 0 | 102 | 333 | **529** |
| R135 (South) | 78 | 89 | 0 | 226 | **392** |
| L3125 (West) | 11 | 164 | 112 | 0 | **287** |
| **Totals** | **182** | **488** | **351** | **589** | **1611** |

**2017 AM Peak Development Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | 0 | **1** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 1 | 0 | 0 | 0 | **1** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **1** | **0** | **1** | **0** | **2** |

**2017 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 236 | 139 | 30 | **405** |
| L3125 (East) | 94 | 0 | 102 | 333 | **529** |
| R135 (South) | 79 | 89 | 0 | 226 | **393** |
| L3125 (West) | 11 | 164 | 112 | 0 | **287** |
| **Totals** | **183** | **488** | **352** | **589** | **1613** |

**2022 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 244 | 143 | 31 | **418** |
| L3125 (East) | 97 | 0 | 105 | 345 | **548** |
| R135 (South) | 80 | 92 | 0 | 234 | **406** |
| L3125 (West) | 11 | 170 | 116 | 0 | **297** |
| **Totals** | **189** | **506** | **364** | **611** | **1670** |

**2022 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 244 | 144 | 31 | **419** |
| L3125 (East) | 97 | 0 | 105 | 345 | **548** |
| R135 (South) | 81 | 92 | 0 | 234 | **407** |
| L3125 (West) | 11 | 170 | 116 | 0 | **297** |
| **Totals** | **190** | **506** | **365** | **611** | **1672** |

**2022 AM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | 0 | **22** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 22 | 0 | 0 | 0 | **22** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **22** | **0** | **22** | **0** | **44** |

**2022 AM Peak With Development + Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 244 | 166 | 31 | **441** |
| L3125 (East) | 97 | 0 | 105 | 345 | **548** |
| R135 (South) | 103 | 92 | 0 | 234 | **429** |
| L3125 (West) | 11 | 170 | 116 | 0 | **297** |
| **Totals** | **212** | **506** | **387** | **611** | **1716** |

**2032 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 254 | 149 | 33 | **435** |
| L3125 (East) | 101 | 0 | 110 | 359 | **570** |
| R135 (South) | 84 | 96 | 0 | 243 | **422** |
| L3125 (West) | 12 | 177 | 121 | 0 | **309** |
| **Totals** | **197** | **527** | **379** | **635** | **1737** |

**2032 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 254 | 150 | 33 | **436** |
| L3125 (East) | 101 | 0 | 110 | 359 | **570** |
| R135 (South) | 85 | 96 | 0 | 243 | **423** |
| L3125 (West) | 12 | 177 | 121 | 0 | **309** |
| **Totals** | **198** | **527** | **380** | **635** | **1739** |

**2032 AM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | 0 | **16** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 16 | 0 | 0 | 0 | **16** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **16** | **0** | **16** | **0** | **32** |

**2032 AM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 254 | 166 | 33 | **452** |
| L3125 (East) | 101 | 0 | 110 | 359 | **570** |
| R135 (South) | 101 | 96 | 0 | 243 | **439** |
| L3125 (West) | 12 | 177 | 121 | 0 | **309** |
| **Totals** | **214** | **527** | **396** | **635** | **1771** |

**R135 / L3125 Signalised Junction - PM Peak Hour**

**2016 Existing PM Peak**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 168 | 86 | 16 | **270** |
| N2 Slip Road | 204 | 0 | 85 | 199 | **488** |
| R135 (South) | 111 | 120 | 0 | 110 | **341** |
| L3125 (West) | 22 | 273 | 163 | 0 | **458** |
| **Totals** | **337** | **561** | **334** | **325** | **1557** |

**2016 PM Peak PCU Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 177 | 97 | 18 | **292** |
| N2 Slip Road | 216 | 0 | 91 | 221 | **528** |
| R135 (South) | 127 | 136 | 0 | 135 | **398** |
| L3125 (West) | 24 | 179 | 175 | 0 | **378** |
| **Totals** | **367** | **492** | **363** | **374** | **1596** |

**2017 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 178 | 98 | 18 | **294** |
| N2 Slip Road | 218 | 0 | 92 | 223 | **532** |
| R135 (South) | 128 | 137 | 0 | 136 | **401** |
| L3125 (West) | 24 | 180 | 176 | 0 | **381** |
| **Totals** | **370** | **495** | **366** | **377** | **1607** |

**2017 PM Peak Development Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | 0 | **1** |
| N2 Slip Road | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 1 | 0 | 0 | 0 | **1** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **1** | **0** | **1** | **0** | **2** |

**2017 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 178 | 99 | 18 | **295** |
| N2 Slip Road | 218 | 0 | 92 | 223 | **532** |
| R135 (South) | 129 | 137 | 0 | 136 | **402** |
| L3125 (West) | 24 | 180 | 176 | 0 | **381** |
| **Totals** | **371** | **495** | **367** | **377** | **1609** |

**2022 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 186 | 102 | 19 | **307** |
| N2 Slip Road | 227 | 0 | 96 | 232 | **555** |
| R135 (South) | 133 | 143 | 0 | 142 | **418** |
| L3125 (West) | 25 | 188 | 184 | 0 | **397** |
| **Totals** | **386** | **517** | **382** | **393** | **1677** |

**2022 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 186 | 103 | 19 | **308** |
| N2 Slip Road | 227 | 0 | 96 | 232 | **555** |
| R135 (South) | 134 | 143 | 0 | 142 | **419** |
| L3125 (West) | 25 | 188 | 184 | 0 | **397** |
| **Totals** | **387** | **517** | **383** | **393** | **1679** |

**2022 PM Peak Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | 0 | **22** |
| N2 Slip Road | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 22 | 0 | 0 | 0 | **22** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **22** | **0** | **22** | **0** | **44** |

**2022 PM Peak With Development + Sensitivity Flows**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 186 | 125 | 19 | **330** |
| N2 Slip Road | 227 | 0 | 96 | 232 | **555** |
| R135 (South) | 156 | 143 | 0 | 142 | **441** |
| L3125 (West) | 25 | 188 | 184 | 0 | **397** |
| **Totals** | **409** | **517** | **405** | **393** | **1723** |

**2032 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 192 | 105 | 20 | **317** |
| N2 Slip Road | 235 | 0 | 99 | 240 | **573** |
| R135 (South) | 138 | 148 | 0 | 147 | **432** |
| L3125 (West) | 26 | 194 | 190 | 0 | **410** |
| **Totals** | **399** | **534** | **394** | **406** | **1733** |

**2032 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 192 | 106 | 20 | **318** |
| N2 Slip Road | 235 | 0 | 99 | 240 | **573** |
| R135 (South) | 139 | 148 | 0 | 147 | **433** |
| L3125 (West) | 26 | 194 | 190 | 0 | **410** |
| **Totals** | **400** | **534** | **395** | **406** | **1735** |

**2032 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | 0 | **16** |
| N2 Slip Road | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 16 | 0 | 0 | 0 | **16** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **16** | **0** | **16** | **0** | **32** |

**2032 PM Peak With Development**

| From / To | R135 (North) | N2 Slip Road | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 192 | 122 | 20 | **334** |
| N2 Slip Road | 235 | 0 | 99 | 240 | **573** |
| R135 (South) | 155 | 148 | 0 | 147 | **449** |
| L3125 (West) | 26 | 194 | 190 | 0 | **410** |
| **Totals** | **416** | **534** | **411** | **406** | **1767** |

## R135 / N2 Roundabout Junction - AM Peak Hour

**2016 Existing AM Peak**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 170 | 139 | **309** |
| R135 (South) | 48 | 0 | 88 | **136** |
| N2 Slip Road | 63 | 186 | 0 | **249** |
| **Totals** | **111** | **356** | **227** | **694** |

**2017 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 171 | 140 | **311** |
| R135 (South) | 48 | 0 | 89 | **137** |
| N2 Slip Road | 63 | 187 | 0 | **251** |
| **Totals** | **112** | **359** | **229** | **699** |

**2017 AM Peak Development Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | **1** |
| R135 (South) | 0 | 0 | 1 | **1** |
| N2 Slip Road | 0 | 0 | 0 | **0** |
| **Totals** | **0** | **0** | **2** | **2** |

**2017 AM Peak With Development**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 171 | 141 | **312** |
| R135 (South) | 48 | 0 | 90 | **138** |
| N2 Slip Road | 63 | 187 | 0 | **251** |
| **Totals** | **112** | **359** | **231** | **701** |

**2022 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 177 | 145 | **322** |
| R135 (South) | 50 | 0 | 92 | **142** |
| N2 Slip Road | 66 | 194 | 0 | **260** |
| **Totals** | **116** | **372** | **237** | **724** |

**2022 AM Peak With Development**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 177 | 146 | **323** |
| R135 (South) | 50 | 0 | 93 | **143** |
| N2 Slip Road | 66 | 194 | 0 | **260** |
| **Totals** | **116** | **372** | **239** | **726** |

**2022 AM Peak Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| R135 (South) | 0 | 0 | 22 | **22** |
| N2 Slip Road | 0 | 0 | 0 | **0** |
| **Totals** | **0** | **0** | **44** | **44** |

**2022 AM Peak With Development + Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 177 | 168 | **345** |
| R135 (South) | 50 | 0 | 115 | **165** |
| N2 Slip Road | 66 | 194 | 0 | **260** |
| **Totals** | **116** | **372** | **283** | **770** |

**2032 AM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 185 | 151 | **336** |
| R135 (South) | 52 | 0 | 96 | **148** |
| N2 Slip Road | 68 | 202 | 0 | **270** |
| **Totals** | **121** | **387** | **246** | **754** |

**2032 AM Peak With Development**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 185 | 152 | **337** |
| R135 (South) | 52 | 0 | 97 | **149** |
| N2 Slip Road | 68 | 202 | 0 | **270** |
| **Totals** | **121** | **387** | **248** | **756** |

**2032 AM Peak Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | **16** |
| R135 (South) | 0 | 0 | 16 | **16** |
| N2 Slip Road | 0 | 0 | 0 | **0** |
| **Totals** | **0** | **0** | **32** | **32** |

**2032 AM Peak With Development + Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 185 | 168 | **353** |
| R135 (South) | 52 | 0 | 113 | **165** |
| N2 Slip Road | 68 | 202 | 0 | **270** |
| **Totals** | **121** | **387** | **280** | **788** |

## R135 / N2 Roundabout Junction - PM Peak Hour

**2016 Existing PM Peak**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 111 | 86 | **197** |
| R135 (South) | 185 | 0 | 175 | **360** |
| N2 Slip Road | 127 | 160 | 0 | **287** |
| **Totals** | **312** | **271** | **261** | **844** |

**2017 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 112 | 87 | **198** |
| R135 (South) | 186 | 0 | 176 | **363** |
| N2 Slip Road | 128 | 161 | 0 | **289** |
| **Totals** | **314** | **273** | **263** | **850** |

**2017 PM Peak Development Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | **1** |
| R135 (South) | 0 | 0 | 1 | **1** |
| N2 Slip Road | 0 | 0 | 0 | **0** |
| **Totals** | **0** | **0** | **2** | **2** |

**2017 PM Peak With Development**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 112 | 88 | **199** |
| R135 (South) | 186 | 0 | 177 | **364** |
| N2 Slip Road | 128 | 161 | 0 | **289** |
| **Totals** | **314** | **273** | **265** | **852** |

**2022 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 116 | 90 | **206** |
| R135 (South) | 193 | 0 | 183 | **376** |
| N2 Slip Road | 133 | 167 | 0 | **300** |
| **Totals** | **326** | **283** | **272** | **881** |

**2022 PM Peak With Development**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 116 | 91 | **207** |
| R135 (South) | 193 | 0 | 184 | **377** |
| N2 Slip Road | 133 | 167 | 0 | **300** |
| **Totals** | **326** | **283** | **274** | **883** |

**2022 PM Peak Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | **22** |
| R135 (South) | 0 | 0 | 22 | **22** |
| N2 Slip Road | 0 | 0 | 0 | **0** |
| **Totals** | **0** | **0** | **44** | **44** |

**2022 PM Peak With Development + Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 116 | 113 | **229** |
| R135 (South) | 193 | 0 | 206 | **399** |
| N2 Slip Road | 133 | 167 | 0 | **300** |
| **Totals** | **326** | **283** | **318** | **927** |

**2022 PM Peak No Development (Existing + TII Growth Factors)**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 121 | 93 | **214** |
| R135 (South) | 201 | 0 | 190 | **391** |
| N2 Slip Road | 138 | 174 | 0 | **312** |
| **Totals** | **339** | **294** | **283** | **916** |

**2022 PM Peak With Development**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 121 | 94 | **215** |
| R135 (South) | 201 | 0 | 191 | **392** |
| N2 Slip Road | 138 | 174 | 0 | **312** |
| **Totals** | **339** | **294** | **285** | **918** |

**2022 PM Peak Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | **16** |
| R135 (South) | 0 | 0 | 16 | **16** |
| N2 Slip Road | 0 | 0 | 0 | **0** |
| **Totals** | **0** | **0** | **32** | **32** |

**2022 PM Peak With Development + Sensitivity Flows**

| From / To | R135 (North) | R135 (South) | N2 Slip Road | Totals |
|---|---|---|---|---|
| R135 (North) | 0 | 121 | 110 | **231** |
| R135 (South) | 201 | 0 | 207 | **408** |
| N2 Slip Road | 138 | 174 | 0 | **312** |
| **Totals** | **339** | **294** | **317** | **950** |

## R135 / L3125 Signalised Junction - AM Peak Hour

**2016 Existing AM Peak**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 219 | 117 | 29 | **365** |
| L3125 (East) | 82 | 0 | 90 | 320 | **492** |
| R135 (South) | 59 | 73 | 0 | 205 | **337** |
| L3125 (West) | 9 | 134 | 81 | 0 | **224** |
| **Totals** | **150** | **426** | **288** | **554** | **1418** |

**2016 AM Peak PCU Flows + Re-distributed Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 117 | 137 | 30 | **284** |
| L3125 (East) | 46 | 0 | 101 | 331 | **478** |
| R135 (South) | 77 | 88 | 0 | 224 | **389** |
| L3125 (West) | 11 | 163 | 111 | 0 | **285** |
| **Totals** | **134** | **368** | **349** | **585** | **1436** |

**2017 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 118 | 138 | 30 | **286** |
| L3125 (East) | 46 | 0 | 102 | 333 | **481** |
| R135 (South) | 78 | 89 | 0 | 226 | **392** |
| L3125 (West) | 11 | 164 | 112 | 0 | **287** |
| **Totals** | **135** | **371** | **351** | **589** | **1446** |

**2017 AM Peak Development Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | 0 | **1** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 1 | 0 | 0 | 0 | **1** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **1** | **0** | **1** | **0** | **2** |

**2017 AM Peak With Development**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 118 | 139 | 30 | **287** |
| L3125 (East) | 46 | 0 | 102 | 333 | **481** |
| R135 (South) | 79 | 89 | 0 | 226 | **393** |
| L3125 (West) | 11 | 164 | 112 | 0 | **287** |
| **Totals** | **136** | **371** | **352** | **589** | **1448** |

**2022 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 122 | 143 | 31 | **296** |
| L3125 (East) | 48 | 0 | 105 | 345 | **499** |
| R135 (South) | 80 | 92 | 0 | 234 | **406** |
| L3125 (West) | 11 | 170 | 116 | 0 | **297** |
| **Totals** | **140** | **384** | **364** | **611** | **1499** |



**2022 AM Peak With Development + Opening of Aiport Link Road**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 122 | 144 | 31 | **297** |
| L3125 (East) | 48 | 0 | 105 | 345 | **499** |
| R135 (South) | 81 | 92 | 0 | 234 | **407** |
| L3125 (West) | 11 | 170 | 116 | 0 | **297** |
| **Totals** | **141** | **384** | **365** | **611** | **1501** |

**2022 AM Peak Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | 0 | **22** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 22 | 0 | 0 | 0 | **22** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **22** | **0** | **22** | **0** | **44** |

**2022 AM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 122 | 166 | 31 | **319** |
| L3125 (East) | 48 | 0 | 105 | 345 | **499** |
| R135 (South) | 103 | 92 | 0 | 234 | **429** |
| L3125 (West) | 11 | 170 | 116 | 0 | **297** |
| **Totals** | **163** | **384** | **387** | **611** | **1545** |

**2032 AM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 127 | 149 | 33 | **308** |
| L3125 (East) | 50 | 0 | 110 | 359 | **519** |
| R135 (South) | 84 | 96 | 0 | 243 | **422** |
| L3125 (West) | 12 | 177 | 121 | 0 | **309** |
| **Totals** | **146** | **400** | **379** | **635** | **1559** |

**2032 AM Peak With Development + Opening of Aiport Link Road**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 127 | 150 | 33 | **309** |
| L3125 (East) | 50 | 0 | 110 | 359 | **519** |
| R135 (South) | 85 | 96 | 0 | 243 | **423** |
| L3125 (West) | 12 | 177 | 121 | 0 | **309** |
| **Totals** | **147** | **400** | **380** | **635** | **1561** |

**2032 AM Peak Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | 0 | **16** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 16 | 0 | 0 | 0 | **16** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **16** | **0** | **16** | **0** | **32** |

**2032 AM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | Totals |
|---|---|---|---|---|---|
| R135 (North) | 0 | 127 | 166 | 33 | **325** |
| L3125 (East) | 50 | 0 | 110 | 359 | **519** |
| R135 (South) | 101 | 96 | 0 | 243 | **439** |
| L3125 (West) | 12 | 177 | 121 | 0 | **309** |
| **Totals** | **163** | **400** | **396** | **635** | **1593** |

**R135 / L3125 Signalised Junction - PM Peak Hour**

**2016 Existing PM Peak**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 168 | 86 | 16 | **270** |
| L3125 (East) | 204 | 0 | 85 | 199 | **488** |
| R135 (South) | 111 | 120 | 0 | 110 | **341** |
| L3125 (West) | 22 | 273 | 163 | 0 | **458** |
| **Totals** | **337** | **561** | **334** | **325** | **1557** |

**2016 PM Peak PCU Flows + Re-distributed Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 88 | 97 | 18 | **203** |
| L3125 (East) | 108 | 0 | 91 | 221 | **420** |
| R135 (South) | 127 | 136 | 0 | 135 | **398** |
| L3125 (West) | 24 | 179 | 175 | 0 | **378** |
| **Totals** | **259** | **403** | **363** | **374** | **1399** |

**2017 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 89 | 98 | 18 | **204** |
| L3125 (East) | 109 | 0 | 92 | 223 | **423** |
| R135 (South) | 128 | 137 | 0 | 136 | **401** |
| L3125 (West) | 24 | 180 | 176 | 0 | **381** |
| **Totals** | **261** | **406** | **366** | **377** | **1409** |

**2017 PM Peak Development Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 1 | 0 | **1** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 1 | 0 | 0 | 0 | **1** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **1** | **0** | **1** | **0** | **2** |

**2017 PM Peak With Development**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 89 | 99 | 18 | **205** |
| L3125 (East) | 109 | 0 | 92 | 223 | **423** |
| R135 (South) | 129 | 137 | 0 | 136 | **402** |
| L3125 (West) | 24 | 180 | 176 | 0 | **381** |
| **Totals** | **262** | **406** | **367** | **377** | **1411** |

**2022 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 92 | 102 | 19 | **213** |
| L3125 (East) | 114 | 0 | 96 | 232 | **441** |
| R135 (South) | 133 | 143 | 0 | 142 | **418** |
| L3125 (West) | 25 | 188 | 184 | 0 | **397** |
| **Totals** | **272** | **424** | **382** | **393** | **1470** |

**2022 PM Peak With Development + Opeing of Airport Link Road**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 92 | 103 | 19 | **214** |
| L3125 (East) | 114 | 0 | 96 | 232 | **441** |
| R135 (South) | 134 | 143 | 0 | 142 | **419** |
| L3125 (West) | 25 | 188 | 184 | 0 | **397** |
| **Totals** | **273** | **424** | **383** | **393** | **1472** |

**2022 PM Peak Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 22 | 0 | **22** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 22 | 0 | 0 | 0 | **22** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **22** | **0** | **22** | **0** | **44** |

**2022 PM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 92 | 125 | 19 | **236** |
| L3125 (East) | 114 | 0 | 96 | 232 | **441** |
| R135 (South) | 156 | 143 | 0 | 142 | **441** |
| L3125 (West) | 25 | 188 | 184 | 0 | **397** |
| **Totals** | **295** | **424** | **405** | **393** | **1516** |

**2032 PM Peak No Development (PCU Flows + TII Growth Factors)**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 96 | 105 | 20 | **220** |
| L3125 (East) | 117 | 0 | 99 | 240 | **456** |
| R135 (South) | 138 | 148 | 0 | 147 | **432** |
| L3125 (West) | 26 | 194 | 190 | 0 | **410** |
| **Totals** | **281** | **438** | **394** | **406** | **1519** |

**2032 PM Peak With Development + Opening of Airport Link Road**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 96 | 106 | 20 | **221** |
| L3125 (East) | 117 | 0 | 99 | 240 | **456** |
| R135 (South) | 139 | 148 | 0 | 147 | **433** |
| L3125 (West) | 26 | 194 | 190 | 0 | **410** |
| **Totals** | **282** | **438** | **395** | **406** | **1521** |

**2032 PM Peak Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 0 | 16 | 0 | **16** |
| L3125 (East) | 0 | 0 | 0 | 0 | **0** |
| R135 (South) | 16 | 0 | 0 | 0 | **16** |
| L3125 (West) | 0 | 0 | 0 | 0 | **0** |
| **Totals** | **16** | **0** | **16** | **0** | **32** |

**2032 PM Peak With Development Flows + Sensitivity Flows**

| From / To | R135 (North) | L3125 (East) | R135 (South) | L3125 (West) | **Totals** |
|---|---|---|---|---|---|
| R135 (North) | 0 | 96 | 122 | 20 | **237** |
| L3125 (East) | 117 | 0 | 99 | 240 | **456** |
| R135 (South) | 155 | 148 | 0 | 147 | **449** |
| L3125 (West) | 26 | 194 | 190 | 0 | **410** |
| **Totals** | **298** | **438** | **411** | **406** | **1553** |

# APPENDIX 13-C
# PICADY RESULTS

```
                              TRL LIMITED
                           (C) COPYRIGHT 2006
   CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS
                        PICADY 5.0  ANALYSIS PROGRAM
                          RELEASE 3.0        (JUNE 2006)

               ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
                  BY PERMISSION OF THE CONTROLLER OF HMSO
              --------------------------------------------------------
                  FOR SALES AND DISTRIBUTION INFORMATION,
                  PROGRAM ADVICE AND MAINTENANCE CONTACT:
                            TRL SOFTWARE BUREAU
                TEL: CROWTHORNE (01344) 770758, FAX: 770864
                      EMAIL: SoftwareBureau@trl.co.uk
             --------------------------------------------------------

 THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
 IN NO WAY  RELIEVED OF HIS RESPONSIBILITY  FOR THE CORRECTNESS  OF THE SOLUTION

 Run with file:-
 "C:\PICADY\2016\16047-04\R135 - N2 Slip Road Priority Junction.vpi"
(drive-on-the-left ) at 11:50:34 on Friday, 2 December 2016

.RUN INFORMATION
 ***************
    RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 02/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan Consulting
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

 .MAJOR/MINOR JUNCTION CAPACITY AND DELAY
  ***************************************
  INPUT DATA
  ----------

                    MAJOR ROAD (ARM C) ---------------------- MAJOR ROAD (ARM A)
                                               I
                                               I
                                               I
                                               I
                                               I
                                               I

                                          MINOR ROAD (ARM B)
  ARM A IS R135 North
 ARM B IS N2 Slip Road
 ARM C IS R135 South

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

.GEOMETRIC DATA
```

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.20 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| | | |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 200.0 M. |
| - BLOCKS TRAFFIC | | NO |
| | | |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | - |
| - LANE 2 WIDTH | (WB-A) | - |
| - WIDTH AT 0 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 5 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 10 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 15 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 20 M FROM JUNC. | | 6.00 M. |
| - LENGTH OF FLARED SECTION | | 10 VEHS |

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2016 AM Peak - Existing Flows

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.73 | 1.09 | 0.73 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.55 | 9.83 | 6.55 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.08 | 1.61 | 1.08 |

| TIME | FROM/TO | TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 58.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.756 | 0.000 | 0.244 |
| | | 396.0 | 0.0 | 128.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 86.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2016 AM Peak - Existing Flows
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.61 | 5.84 | 0.275 | | 0.00 | 0.37 | 5.2 | | 0.23 |
| B-A | 4.97 | 8.61 | 0.577 | | 0.00 | 1.31 | 17.9 | | 0.26 |
| C-A | 1.08 | | | | | | | | |
| C-B | 0.00 | 10.26 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.73 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 1.92 | 5.55 | 0.345 | | 0.37 | 0.51 | 7.4 | | 0.27 |
| B-A | 5.93 | 8.52 | 0.696 | | 1.31 | 2.13 | 29.3 | | 0.37 |
| C-A | 1.29 | | | | | | | | |
| C-B | 0.00 | 10.22 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.87 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.35 | 4.70 | 0.500 | | 0.51 | 0.95 | 13.1 | | 0.42 |
| B-A | 7.27 | 8.40 | 0.865 | | 2.13 | 4.88 | 60.4 | | 0.68 |
| C-A | 1.58 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.06 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.35 | 4.47 | 0.526 | | 0.95 | 1.06 | 15.4 | | 0.47 |
| B-A | 7.27 | 8.40 | 0.865 | | 4.88 | 5.44 | 78.0 | | 0.80 |
| C-A | 1.58 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.06 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 1.92 | 5.47 | 0.351 | | 1.06 | 0.56 | 8.9 | | 0.29 |
| B-A | 5.93 | 8.52 | 0.696 | | 5.44 | 2.47 | 42.7 | | 0.45 |
| C-A | 1.29 | | | | | | | | |
| C-B | 0.00 | 10.22 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.87 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 1.61 | 5.80 | 0.277 | | 0.56 | 0.39 | 6.1 | | 0.24 |
| B-A | 4.97 | 8.61 | 0.577 | | 2.47 | 1.42 | 23.0 | | 0.29 |
| C-A | 1.08 | | | | | | | | |
| C-B | 0.00 | 10.26 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.73 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 0.4 | |
| 07.45 | 0.5 | * |
| 08.00 | 0.9 | * |
| 08.15 | 1.1 | * |
| 08.30 | 0.6 | * |
| 08.45 | 0.4 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 1.3 | * |
| 07.45 | 2.1 | ** |
| 08.00 | 4.9 | ***** |
| 08.15 | 5.4 | ***** |
| 08.30 | 2.5 | ** |
| 08.45 | 1.4 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.0 |
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.0 |
| 08.45 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-C | 176.2 | 117.5 | 56.1 | 0.32 | 56.1 | 0.32 |
| B-A | 545.1 | 363.4 | 251.3 | 0.46 | 251.4 | 0.46 |
| C-A | 118.4 | 78.9 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 79.8 | 53.2 | | | | |
| ALL | 919.5 | 613.0 | 307.4 | 0.33 | 307.5 | 0.33 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2017 AM Peak - No Development

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.73 | 1.09 | 0.73 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.60 | 9.90 | 6.60 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.09 | 1.63 | 1.09 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 58.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.756 | 0.000 | 0.244 |
| | | 399.0 | 0.0 | 129.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 87.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2017 AM Peak - No Development
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.62 | 5.83 | 0.278 | | 0.00 | 0.38 | 5.3 | | 0.23 |
| B-A | 5.01 | 8.61 | 0.582 | | 0.00 | 1.33 | 18.2 | | 0.27 |
| C-A | 1.09 | | | | | | | | |
| C-B | 0.00 | 10.26 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.73 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 1.93 | 5.54 | 0.349 | | 0.38 | 0.52 | 7.5 | | 0.28 |
| B-A | 5.98 | 8.52 | 0.702 | | 1.33 | 2.19 | 29.9 | | 0.38 |
| C-A | 1.30 | | | | | | | | |
| C-B | 0.00 | 10.22 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.87 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.37 | 4.63 | 0.511 | | 0.52 | 0.99 | 13.6 | | 0.43 |
| B-A | 7.32 | 8.39 | 0.872 | | 2.19 | 5.08 | 62.5 | | 0.70 |
| C-A | 1.60 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.06 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.37 | 4.37 | 0.542 | | 0.99 | 1.13 | 16.2 | | 0.49 |
| B-A | 7.32 | 8.39 | 0.872 | | 5.08 | 5.70 | 81.5 | | 0.84 |
| C-A | 1.60 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.06 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 1.93 | 5.45 | 0.355 | | 1.13 | 0.57 | 9.1 | | 0.29 |
| B-A | 5.98 | 8.52 | 0.702 | | 5.70 | 2.55 | 44.3 | | 0.46 |
| C-A | 1.30 | | | | | | | | |
| C-B | 0.00 | 10.22 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.87 | | | | | | | | |

```
.-----------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I           (VEH/MIN) (VEH/MIN) CAPACITY    FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/     PER ARRIVING  I
 I                                 (RFC)   (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 08.30-08.45                                                                                                   I
 I   B-C        1.62      5.79    0.279                0.57   0.40        6.2                           0.24       I
 I   B-A        5.01      8.61    0.582                2.55   1.45       23.5                           0.29       I
 I   C-A        1.09                                                                                             I
 I   C-B        0.00     10.26    0.000                0.00   0.00        0.0                           0.00       I
 I   A-B        0.00                                                                                             I
 I   A-C        0.73                                                                                             I
 I                                                                                                               I
.-----------------------------------------------------------------------------------------------------------------------
.
 QUEUE FOR STREAM   B-C
 -------------------------
 TIME SEGMENT    NO. OF
   ENDING       VEHICLES
                IN QUEUE
   07.30           0.4
   07.45           0.5    *
   08.00           1.0    *
   08.15           1.1    *
   08.30           0.6    *
   08.45           0.4
.
 QUEUE FOR STREAM   B-A
 -------------------------
 TIME SEGMENT    NO. OF
   ENDING       VEHICLES
                IN QUEUE
   07.30           1.3    *
   07.45           2.2    **
   08.00           5.1    *****
   08.15           5.7    ******
   08.30           2.5    ***
   08.45           1.4    *
.
 QUEUE FOR STREAM   C-B
 -------------------------
 TIME SEGMENT    NO. OF
   ENDING       VEHICLES
                IN QUEUE
   07.30           0.0
   07.45           0.0
   08.00           0.0
   08.15           0.0
   08.30           0.0
   08.45           0.0
.
                QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
                --------------------------------------------

 ---------------------------------------------------------------------------
 I STREAM I   TOTAL DEMAND  I   * QUEUEING *      I * INCLUSIVE QUEUEING * I
 I        I                 I    * DELAY *        I      * DELAY *         I
 I        I--------------------------------------------------------------I
 I        I  (VEH)  (VEH/H) I  (MIN)    (MIN/VEH) I    (MIN)     (MIN/VEH) I
 ---------------------------------------------------------------------------
 I  B-C   I  177.6 I  118.4 I   58.0 I    0.33    I     58.0  I    0.33    I
 I  B-A   I  549.2 I  366.1 I  260.0 I    0.47    I    260.1  I    0.47    I
 I  C-A   I  119.7 I   79.8 I        I            I           I            I
 I  C-B   I    0.0 I    0.0 I    0.0 I    0.00    I      0.0  I    0.00    I
 I  A-B   I    0.0 I    0.0 I        I            I           I            I
 I  A-C   I   79.8 I   53.2 I        I            I           I            I
 ---------------------------------------------------------------------------
 I  ALL   I  926.3 I  617.6 I  317.9 I    0.34    I    318.1  I    0.34    I
 ---------------------------------------------------------------------------


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


 END OF JOB
```

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2017 AM Peak - With Development

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.74 | 1.11 | 0.74 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.63 | 9.94 | 6.63 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.13 | 1.69 | 1.13 |

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 59.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.753 | 0.000 | 0.247 |
| | | 399.0 | 0.0 | 131.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 90.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2017 AM Peak - With Development
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.64 | 5.83 | 0.282 | | 0.00 | 0.38 | 5.4 | | 0.24 |
| B-A | 5.01 | 8.58 | 0.583 | | 0.00 | 1.34 | 18.3 | | 0.27 |
| C-A | 1.13 | | | | | | | | |
| C-B | 0.00 | 10.26 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.74 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 1.96 | 5.54 | 0.354 | | 0.38 | 0.53 | 7.6 | | 0.28 |
| B-A | 5.98 | 8.49 | 0.704 | | 1.34 | 2.21 | 30.2 | | 0.38 |
| C-A | 1.35 | | | | | | | | |
| C-B | 0.00 | 10.22 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.88 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.40 | 4.61 | 0.522 | | 0.53 | 1.03 | 14.1 | | 0.44 |
| B-A | 7.32 | 8.36 | 0.876 | | 2.21 | 5.17 | 63.4 | | 0.71 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.08 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.40 | 4.33 | 0.555 | | 1.03 | 1.18 | 17.0 | | 0.51 |
| B-A | 7.32 | 8.36 | 0.876 | | 5.17 | 5.82 | 83.2 | | 0.86 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.08 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 1.96 | 5.44 | 0.360 | | 1.18 | 0.58 | 9.3 | | 0.29 |
| B-A | 5.98 | 8.49 | 0.704 | | 5.82 | 2.58 | 45.0 | | 0.47 |
| C-A | 1.35 | | | | | | | | |
| C-B | 0.00 | 10.22 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.88 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 1.64 | 5.80 | 0.284 | | 0.58 | 0.40 | 6.3 | | 0.24 |
| B-A | 5.01 | 8.58 | 0.583 | | 2.58 | 1.46 | 23.6 | | 0.29 |
| C-A | 1.13 | | | | | | | | |
| C-B | 0.00 | 10.26 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.74 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 0.4 | |
| 07.45 | 0.5 | * |
| 08.00 | 1.0 | * |
| 08.15 | 1.2 | * |
| 08.30 | 0.6 | * |
| 08.45 | 0.4 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 1.3 | * |
| 07.45 | 2.2 | ** |
| 08.00 | 5.2 | ***** |
| 08.15 | 5.8 | ****** |
| 08.30 | 2.6 | *** |
| 08.45 | 1.5 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.0 |
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.0 |
| 08.45 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 180.3 | 120.2 | 59.9 | 0.33 | 59.9 | 0.33 |
| B-A | 549.2 | 366.1 | 263.8 | 0.48 | 263.9 | 0.48 |
| C-A | 123.9 | 82.6 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 81.2 | 54.1 | | | | |
| ALL | 934.6 | 623.1 | 323.7 | 0.35 | 323.8 | 0.35 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2022 AM Peak - No Development

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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



DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.76 | 1.14 | 0.76 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.84 | 10.26 | 6.84 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.13 | 1.69 | 1.13 |

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 61.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.755 | 0.000 | 0.245 |
| | | 413.0 | 0.0 | 134.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 90.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 AM Peak - No Development
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.68 | 5.78 | 0.291 | | 0.00 | 0.40 | 5.6 | | 0.24 |
| B-A | 5.18 | 8.58 | 0.604 | | 0.00 | 1.45 | 19.7 | | 0.28 |
| C-A | 1.13 | | | | | | | | |
| C-B | 0.00 | 10.25 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.77 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 2.01 | 5.46 | 0.368 | | 0.40 | 0.57 | 8.1 | | 0.29 |
| B-A | 6.19 | 8.49 | 0.729 | | 1.45 | 2.46 | 33.4 | | 0.41 |
| C-A | 1.35 | | | | | | | | |
| C-B | 0.00 | 10.21 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.91 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.46 | 4.20 | 0.586 | | 0.57 | 1.30 | 17.4 | | 0.55 |
| B-A | 7.58 | 8.36 | 0.906 | | 2.46 | 6.21 | 74.0 | | 0.81 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.00 | 10.16 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.12 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.46 | 3.70 | 0.665 | | 1.30 | 1.77 | 24.4 | | 0.76 |
| B-A | 7.58 | 8.36 | 0.906 | | 6.21 | 7.26 | 102.0 | | 1.03 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.00 | 10.16 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.12 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 2.01 | 5.31 | 0.378 | | 1.77 | 0.63 | 10.4 | | 0.32 |
| B-A | 6.19 | 8.49 | 0.729 | | 7.26 | 2.95 | 54.1 | | 0.55 |
| C-A | 1.35 | | | | | | | | |
| C-B | 0.00 | 10.21 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.91 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 1.68 | 5.74 | 0.293 | | 0.63 | 0.42 | 6.7 | | 0.25 |
| B-A | 5.18 | 8.58 | 0.604 | | 2.95 | 1.59 | 26.0 | | 0.31 |
| C-A | 1.13 | | | | | | | | |
| C-B | 0.00 | 10.25 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.77 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 0.4 | |
| 07.45 | 0.6 | * |
| 08.00 | 1.3 | * |
| 08.15 | 1.8 | ** |
| 08.30 | 0.6 | * |
| 08.45 | 0.4 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 1.5 | * |
| 07.45 | 2.5 | ** |
| 08.00 | 6.2 | ****** |
| 08.15 | 7.3 | ******* |
| 08.30 | 3.0 | *** |
| 08.45 | 1.6 | ** |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.0 |
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.0 |
| 08.45 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 184.4 | 123.0 | 72.6 | 0.39 | 72.6 | 0.39 |
| B-A | 568.5 | 379.0 | 309.1 | 0.54 | 309.2 | 0.54 |
| C-A | 123.9 | 82.6 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 84.0 | 56.0 | | | | |
| ALL | 960.7 | 640.5 | 381.7 | 0.40 | 381.9 | 0.40 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2022 AM Peak - With Development

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.77 | 1.16 | 0.77 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.86 | 10.29 | 6.86 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.16 | 1.74 | 1.16 |

| TIME | FROM/TO | TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 62.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.752 | 0.000 | 0.248 |
| | | 413.0 | 0.0 | 136.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 93.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 AM Peak - With Development
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.71 | 5.79 | 0.295 | | 0.00 | 0.41 | 5.7 | | 0.24 |
| B-A | 5.18 | 8.56 | 0.605 | | 0.00 | 1.46 | 19.8 | | 0.28 |
| C-A | 1.17 | | | | | | | | |
| C-B | 0.00 | 10.25 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.78 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 2.04 | 5.46 | 0.373 | | 0.41 | 0.58 | 8.3 | | 0.29 |
| B-A | 6.19 | 8.46 | 0.731 | | 1.46 | 2.49 | 33.7 | | 0.41 |
| C-A | 1.39 | | | | | | | | |
| C-B | 0.00 | 10.21 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.93 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.50 | 4.17 | 0.599 | | 0.58 | 1.37 | 18.2 | | 0.56 |
| B-A | 7.58 | 8.33 | 0.910 | | 2.49 | 6.33 | 75.1 | | 0.83 |
| C-A | 1.71 | | | | | | | | |
| C-B | 0.00 | 10.15 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.14 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.50 | 3.63 | 0.687 | | 1.37 | 1.93 | 26.3 | | 0.82 |
| B-A | 7.58 | 8.33 | 0.910 | | 6.33 | 7.43 | 104.3 | | 1.06 |
| C-A | 1.71 | | | | | | | | |
| C-B | 0.00 | 10.15 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.14 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 2.04 | 5.30 | 0.384 | | 1.93 | 0.64 | 10.8 | | 0.32 |
| B-A | 6.19 | 8.46 | 0.731 | | 7.43 | 2.99 | 55.2 | | 0.56 |
| C-A | 1.39 | | | | | | | | |
| C-B | 0.00 | 10.21 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.93 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 1.71 | 5.75 | 0.297 | | 0.64 | 0.43 | 6.8 | | 0.25 |
| B-A | 5.18 | 8.56 | 0.605 | | 2.99 | 1.61 | 26.2 | | 0.31 |
| C-A | 1.17 | | | | | | | | |
| C-B | 0.00 | 10.25 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.78 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 0.4 | |
| 07.45 | 0.6 | * |
| 08.00 | 1.4 | * |
| 08.15 | 1.9 | ** |
| 08.30 | 0.6 | * |
| 08.45 | 0.4 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 1.5 | * |
| 07.45 | 2.5 | ** |
| 08.00 | 6.3 | ****** |
| 08.15 | 7.4 | ******* |
| 08.30 | 3.0 | *** |
| 08.45 | 1.6 | ** |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.0 |
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.0 |
| 08.45 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 187.2 | 124.8 | 76.1 | 0.41 | 76.1 | 0.41 |
| B-A | 568.5 | 379.0 | 314.3 | 0.55 | 314.4 | 0.55 |
| C-A | 128.0 | 85.3 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 85.3 | 56.9 | | | | |
| ALL | 969.0 | 646.0 | 390.4 | 0.40 | 390.5 | 0.40 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2016 PM Peak - Existing Flows

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.25 | 0.38 | 0.25 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.10 | 6.15 | 4.10 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.45 | 2.18 | 1.45 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 20.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.939 | 0.000 | 0.061 |
| | | 308.0 | 0.0 | 20.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 116.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2016 PM Peak - Existing Flows
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.25 | 5.12 | 0.049 | | 0.00 | 0.05 | 0.7 | | 0.21 |
| B-A | 3.86 | 8.40 | 0.460 | | 0.00 | 0.83 | 11.6 | | 0.22 |
| C-A | 1.46 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.25 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.30 | 4.96 | 0.060 | | 0.05 | 0.06 | 0.9 | | 0.21 |
| B-A | 4.61 | 8.34 | 0.554 | | 0.83 | 1.20 | 17.0 | | 0.27 |
| C-A | 1.74 | | | | | | | | |
| C-B | 0.00 | 10.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.30 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.37 | 4.71 | 0.078 | | 0.06 | 0.08 | 1.2 | | 0.23 |
| B-A | 5.65 | 8.25 | 0.685 | | 1.20 | 2.03 | 27.8 | | 0.37 |
| C-A | 2.13 | | | | | | | | |
| C-B | 0.00 | 10.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.37 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.37 | 4.69 | 0.078 | | 0.08 | 0.08 | 1.3 | | 0.23 |
| B-A | 5.65 | 8.25 | 0.685 | | 2.03 | 2.09 | 31.0 | | 0.38 |
| C-A | 2.13 | | | | | | | | |
| C-B | 0.00 | 10.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.37 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.30 | 4.94 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.22 |
| B-A | 4.61 | 8.34 | 0.554 | | 2.09 | 1.29 | 20.7 | | 0.28 |
| C-A | 1.74 | | | | | | | | |
| C-B | 0.00 | 10.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.30 | | | | | | | | |

| I | TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) | I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 17.45-18.00 | | | | | | | | | | I |
| I | B-C | 0.25 | 5.10 | 0.049 | | 0.07 | 0.05 | 0.8 | | 0.21 | I |
| I | B-A | 3.86 | 8.40 | 0.460 | | 1.29 | 0.87 | 13.8 | | 0.22 | I |
| I | C-A | 1.46 | | | | | | | | | I |
| I | C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 | I |
| I | A-B | 0.00 | | | | | | | | | I |
| I | A-C | 0.25 | | | | | | | | | I |
| I | | | | | | | | | | | I |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.8 | * |
| 17.00 | 1.2 | * |
| 17.15 | 2.0 | ** |
| 17.30 | 2.1 | ** |
| 17.45 | 1.3 | * |
| 18.00 | 0.9 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | (VEH/H) | * QUEUEING * * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 27.5 | 18.4 | 5.9 | 0.22 | 5.9 | 0.22 |
| B-A | 423.9 | 282.6 | 121.8 | 0.29 | 121.8 | 0.29 |
| C-A | 159.7 | 106.4 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 27.5 | 18.4 | | | | |
| ALL | 638.7 | 425.8 | 127.7 | 0.20 | 127.8 | 0.20 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2017 PM Peak - No Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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



DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.25 | 0.38 | 0.25 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.13 | 6.19 | 4.13 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.46 | 2.19 | 1.46 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS<br>TURNING COUNTS (VEH/HR)<br>(PERCENTAGE OF H.V.S) | | |
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 20.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.939 | 0.000 | 0.061 |
| | | 310.0 | 0.0 | 20.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 117.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2017 PM Peak - No Development
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.25 | 5.11 | 0.049 | | 0.00 | 0.05 | 0.7 | | 0.21 |
| B-A | 3.89 | 8.40 | 0.463 | | 0.00 | 0.84 | 11.7 | | 0.22 |
| C-A | 1.47 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.25 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.30 | 4.95 | 0.060 | | 0.05 | 0.06 | 0.9 | | 0.21 |
| B-A | 4.64 | 8.33 | 0.557 | | 0.84 | 1.21 | 17.2 | | 0.27 |
| C-A | 1.75 | | | | | | | | |
| C-B | 0.00 | 10.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.30 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.37 | 4.70 | 0.078 | | 0.06 | 0.08 | 1.2 | | 0.23 |
| B-A | 5.69 | 8.25 | 0.690 | | 1.21 | 2.07 | 28.3 | | 0.37 |
| C-A | 2.15 | | | | | | | | |
| C-B | 0.00 | 10.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.37 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.37 | 4.68 | 0.078 | | 0.08 | 0.08 | 1.3 | | 0.23 |
| B-A | 5.69 | 8.25 | 0.690 | | 2.07 | 2.14 | 31.6 | | 0.39 |
| C-A | 2.15 | | | | | | | | |
| C-B | 0.00 | 10.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.37 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.30 | 4.94 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.22 |
| B-A | 4.64 | 8.33 | 0.557 | | 2.14 | 1.31 | 21.0 | | 0.28 |
| C-A | 1.75 | | | | | | | | |
| C-B | 0.00 | 10.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.30 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.25 | 5.10 | 0.049 | | 0.07 | 0.05 | 0.8 | | 0.21 |
| B-A | 3.89 | 8.40 | 0.463 | | 1.31 | 0.89 | 14.0 | | 0.22 |
| C-A | 1.47 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.25 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.8 | * |
| 17.00 | 1.2 | * |
| 17.15 | 2.1 | ** |
| 17.30 | 2.1 | ** |
| 17.45 | 1.3 | * |
| 18.00 | 0.9 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 27.5 | 18.4 | 6.0 | 0.22 | 6.0 | 0.22 |
| B-A | 426.7 | 284.5 | 123.9 | 0.29 | 123.9 | 0.29 |
| C-A | 161.0 | 107.4 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 27.5 | 18.4 | | | | |
| ALL | 642.8 | 428.5 | 129.8 | 0.20 | 129.9 | 0.20 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2017 PM Peak - With Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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



DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.26 | 0.39 | 0.26 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.14 | 6.21 | 4.14 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.50 | 2.25 | 1.50 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS<br>TURNING COUNTS (VEH/HR)<br>(PERCENTAGE OF H.V.S) | | |
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 21.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.937 | 0.000 | 0.063 |
| | | 310.0 | 0.0 | 21.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 120.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2017 PM Peak - With Development
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.26 | 5.11 | 0.052 | | 0.00 | 0.05 | 0.8 | | 0.21 |
| B-A | 3.89 | 8.39 | 0.464 | | 0.00 | 0.84 | 11.8 | | 0.22 |
| C-A | 1.51 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.26 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.31 | 4.95 | 0.064 | | 0.05 | 0.07 | 1.0 | | 0.22 |
| B-A | 4.64 | 8.32 | 0.558 | | 0.84 | 1.22 | 17.2 | | 0.27 |
| C-A | 1.80 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.31 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.39 | 4.69 | 0.082 | | 0.07 | 0.09 | 1.3 | | 0.23 |
| B-A | 5.69 | 8.23 | 0.691 | | 1.22 | 2.08 | 28.4 | | 0.38 |
| C-A | 2.20 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.39 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.39 | 4.67 | 0.082 | | 0.09 | 0.09 | 1.3 | | 0.23 |
| B-A | 5.69 | 8.23 | 0.691 | | 2.08 | 2.15 | 31.8 | | 0.39 |
| C-A | 2.20 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.39 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.31 | 4.93 | 0.064 | | 0.09 | 0.07 | 1.1 | | 0.22 |
| B-A | 4.64 | 8.32 | 0.558 | | 2.15 | 1.31 | 21.1 | | 0.28 |
| C-A | 1.80 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.31 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.26 | 5.09 | 0.052 | | 0.07 | 0.06 | 0.9 | | 0.21 |
| B-A | 3.89 | 8.39 | 0.464 | | 1.31 | 0.89 | 14.0 | | 0.23 |
| C-A | 1.51 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.26 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.8 | * |
| 17.00 | 1.2 | * |
| 17.15 | 2.1 | ** |
| 17.30 | 2.1 | ** |
| 17.45 | 1.3 | * |
| 18.00 | 0.9 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 28.9 | 19.3 | 6.3 | 0.22 | 6.3 | 0.22 |
| B-A | 426.7 | 284.5 | 124.3 | 0.29 | 124.4 | 0.29 |
| C-A | 165.2 | 110.1 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 28.9 | 19.3 | | | | |
| ALL | 649.7 | 433.1 | 130.6 | 0.20 | 130.7 | 0.20 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2022 PM Peak - No Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.26 | 0.39 | 0.26 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.28 | 6.41 | 4.28 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.51 | 2.27 | 1.51 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 21.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.939 | 0.000 | 0.061 |
| | | 321.0 | 0.0 | 21.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 121.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 PM Peak - No Development
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.26 | 5.08 | 0.052 | | 0.00 | 0.05 | 0.8 | | 0.21 |
| B-A | 4.03 | 8.38 | 0.480 | | 0.00 | 0.90 | 12.5 | | 0.22 |
| C-A | 1.52 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.26 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.31 | 4.92 | 0.064 | | 0.05 | 0.07 | 1.0 | | 0.22 |
| B-A | 4.81 | 8.32 | 0.578 | | 0.90 | 1.32 | 18.6 | | 0.28 |
| C-A | 1.81 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.31 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.39 | 4.62 | 0.083 | | 0.07 | 0.09 | 1.3 | | 0.24 |
| B-A | 5.89 | 8.23 | 0.716 | | 1.32 | 2.31 | 31.3 | | 0.40 |
| C-A | 2.22 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.39 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.39 | 4.60 | 0.084 | | 0.09 | 0.09 | 1.4 | | 0.24 |
| B-A | 5.89 | 8.23 | 0.716 | | 2.31 | 2.40 | 35.5 | | 0.42 |
| C-A | 2.22 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.39 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.31 | 4.90 | 0.064 | | 0.09 | 0.07 | 1.1 | | 0.22 |
| B-A | 4.81 | 8.32 | 0.578 | | 2.40 | 1.43 | 23.1 | | 0.30 |
| C-A | 1.81 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.31 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.26 | 5.07 | 0.052 | | 0.07 | 0.06 | 0.9 | | 0.21 |
| B-A | 4.03 | 8.38 | 0.480 | | 1.43 | 0.95 | 15.1 | | 0.23 |
| C-A | 1.52 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.26 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.9 | * |
| 17.00 | 1.3 | * |
| 17.15 | 2.3 | ** |
| 17.30 | 2.4 | ** |
| 17.45 | 1.4 | * |
| 18.00 | 1.0 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-C | 28.9 | 19.3 | 6.3 | 0.22 | 6.3 | 0.22 |
| B-A | 441.8 | 294.6 | 136.1 | 0.31 | 136.1 | 0.31 |
| C-A | 166.5 | 111.0 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 28.9 | 19.3 | | | | |
| ALL | 666.2 | 444.1 | 142.4 | 0.21 | 142.5 | 0.21 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2022 PM Peak - With Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.28 | 0.41 | 0.28 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.29 | 6.43 | 4.29 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.55 | 2.32 | 1.55 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 22.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.936 | 0.000 | 0.064 |
| | | 321.0 | 0.0 | 22.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 124.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 PM Peak - With Development
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.28 | 5.08 | 0.054 | | 0.00 | 0.06 | 0.8 | | 0.21 |
| B-A | 4.03 | 8.37 | 0.481 | | 0.00 | 0.90 | 12.5 | | 0.22 |
| C-A | 1.56 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.28 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.33 | 4.91 | 0.067 | | 0.06 | 0.07 | 1.0 | | 0.22 |
| B-A | 4.81 | 8.31 | 0.579 | | 0.90 | 1.32 | 18.6 | | 0.28 |
| C-A | 1.86 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.33 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.40 | 4.62 | 0.087 | | 0.07 | 0.09 | 1.4 | | 0.24 |
| B-A | 5.89 | 8.22 | 0.717 | | 1.32 | 2.33 | 31.5 | | 0.41 |
| C-A | 2.28 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.40 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.40 | 4.59 | 0.088 | | 0.09 | 0.10 | 1.4 | | 0.24 |
| B-A | 5.89 | 8.22 | 0.717 | | 2.33 | 2.42 | 35.7 | | 0.43 |
| C-A | 2.28 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.33 | 4.90 | 0.067 | | 0.10 | 0.07 | 1.1 | | 0.22 |
| B-A | 4.81 | 8.31 | 0.579 | | 2.42 | 1.43 | 23.2 | | 0.30 |
| C-A | 1.86 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.33 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.28 | 5.06 | 0.055 | | 0.07 | 0.06 | 0.9 | | 0.21 |
| B-A | 4.03 | 8.37 | 0.481 | | 1.43 | 0.95 | 15.1 | | 0.23 |
| C-A | 1.56 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.28 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.9 | * |
| 17.00 | 1.3 | * |
| 17.15 | 2.3 | ** |
| 17.30 | 2.4 | ** |
| 17.45 | 1.4 | * |
| 18.00 | 1.0 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-C | 30.3 | 20.2 | 6.7 | 0.22 | 6.7 | 0.22 |
| B-A | 441.8 | 294.6 | 136.6 | 0.31 | 136.7 | 0.31 |
| C-A | 170.7 | 113.8 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 30.3 | 20.2 | | | | |
| ALL | 673.1 | 448.7 | 143.3 | 0.21 | 143.4 | 0.21 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2022 AM Peak - Development Flows + Sensitivity Flows

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 1.05 | 1.57 | 1.05 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.14 | 10.71 | 7.14 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.71 | 2.57 | 1.71 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) | | |
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 84.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.723 | 0.000 | 0.277 |
| | | 413.0 | 0.0 | 158.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 137.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 AM Peak - Development Flows + Sensitivity Flows
AND FOR TIME PERIOD 435

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 1.98 | 5.82 | 0.341 | | 0.00 | 0.50 | 7.0 | | 0.26 |
| B-A | 5.18 | 8.23 | 0.630 | | 0.00 | 1.61 | 21.6 | | 0.31 |
| C-A | 1.72 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.05 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 2.37 | 5.43 | 0.436 | | 0.50 | 0.75 | 10.6 | | 0.32 |
| B-A | 6.19 | 8.09 | 0.765 | | 1.61 | 2.89 | 38.4 | | 0.48 |
| C-A | 2.05 | | | | | | | | |
| C-B | 0.00 | 10.12 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.26 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 2.90 | 3.39 | 0.856 | | 0.75 | 3.67 | 41.4 | | 1.23 |
| B-A | 7.58 | 7.90 | 0.959 | | 2.89 | 8.49 | 94.9 | | 1.07 |
| C-A | 2.51 | | | | | | | | |
| C-B | 0.00 | 10.05 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.54 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 2.90 | 3.05 | 0.951 | | 3.67 | 6.16 | 76.0 | | 2.18 |
| B-A | 7.58 | 7.90 | 0.959 | | 8.49 | 10.88 | 146.8 | | 1.52 |
| C-A | 2.51 | | | | | | | | |
| C-B | 0.00 | 10.05 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.54 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 2.37 | 5.08 | 0.466 | | 6.16 | 0.92 | 21.5 | | 0.48 |
| B-A | 6.19 | 8.09 | 0.765 | | 10.88 | 3.73 | 79.4 | | 0.83 |
| C-A | 2.05 | | | | | | | | |
| C-B | 0.00 | 10.12 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.26 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 1.98 | 5.76 | 0.344 | | 0.92 | 0.54 | 8.6 | | 0.27 |
| B-A | 5.18 | 8.23 | 0.630 | | 3.73 | 1.80 | 29.9 | | 0.36 |
| C-A | 1.72 | | | | | | | | |
| C-B | 0.00 | 10.17 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.05 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.5 | * |
| 17.00 | 0.7 | * |
| 17.15 | 3.7 | **** |
| 17.30 | 6.2 | ****** |
| 17.45 | 0.9 | * |
| 18.00 | 0.5 | * |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 1.6 | ** |
| 17.00 | 2.9 | *** |
| 17.15 | 8.5 | ******** |
| 17.30 | 10.9 | *********** |
| 17.45 | 3.7 | **** |
| 18.00 | 1.8 | ** |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 217.5 | 145.0 | 165.1 | 0.76 | 165.1 | 0.76 |
| B-A | 568.5 | 379.0 | 411.1 | 0.72 | 411.3 | 0.72 |
| C-A | 188.6 | 125.7 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 115.6 | 77.1 | | | | |
| ALL | 1090.1 | 726.8 | 576.2 | 0.53 | 576.4 | 0.53 |

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

END OF JOB

```
.SLOPES AND INTERCEPT
--------------------

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

---------------------------------------------------------
I Intercept For Slope For Opposing   Slope For Opposing I
I Stream B-C     Stream  A-C          Stream A-B        I
---------------------------------------------------------
I     602.92            0.22                0.09        I
---------------------------------------------------------
------------------------------------------------------------------------------------------------
I Intercept For Slope For Opposing   Slope For Opposing   Slope For Opposing   Slope For OpposingI
I Stream B-A     Stream  A-C          Stream A-B           Stream  C-A          Stream C-B       I
------------------------------------------------------------------------------------------------
I     476.98            0.21                0.08                 0.13                 0.30       I
------------------------------------------------------------------------------------------------
---------------------------------------------------------
I Intercept For Slope For Opposing   Slope For Opposing I
I Stream C-B     Stream  A-C          Stream A-B        I
---------------------------------------------------------
I     689.79            0.25                0.25        I
---------------------------------------------------------

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA
--------------------
-----------------------
I ARM I FLOW SCALE(%) I
-----------------------
I A   I      100      I
I B   I      100      I
I C   I      100      I
-----------------------

Demand set: 2022 PM Peak - Development Flows + Sensitivity Flows

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA
-----------------------------------------------------------------------------
I       I   NUMBER OF MINUTES FROM START WHEN    I   RATE OF FLOW (VEH/MIN) I
I  ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP   I AFTER I
I       I   TO RISE   I  IS REACHED I  FALLING   I  PEAK  I OF PEAK I PEAK   I
-----------------------------------------------------------------------------
I ARM A I     15.00   I     45.00   I    75.00   I  0.55  I    0.83  I  0.55 I
I ARM B I     15.00   I     45.00   I    75.00   I  4.15  I    6.23  I  4.15 I
I ARM C I     15.00   I     45.00   I    75.00   I  2.10  I    3.15  I  2.10 I
-----------------------------------------------------------------------------
-----------------------------------------------------------
I                    I         TURNING PROPORTIONS        I
I                    I         TURNING COUNTS (VEH/HR)    I
I                    I        (PERCENTAGE OF H.V.S)       I
I                    -------------------------------------
I        TIME        I FROM/TO I  ARM A I  ARM B I  ARM C I
-----------------------------------------------------------
I   16.30 - 18.00    I         I        I        I        I
I                    I  ARM A  I  0.000 I  0.000 I  1.000 I
I                    I         I    0.0 I    0.0 I   44.0 I
I                    I         I (  0.0)I (  0.0)I ( 35.0)I
I                    I         I        I        I        I
I                    I  ARM B  I  0.967 I  0.000 I  0.033 I
I                    I         I  321.0 I    0.0 I   11.0 I
I                    I         I ( 19.0)I (  0.0)I ( 50.0)I
I                    I         I        I        I        I
I                    I  ARM C  I  1.000 I  0.000 I  0.000 I
I                    I         I  168.0 I    0.0 I    0.0 I
I                    I         I ( 15.0)I (  0.0)I (  0.0)I
I                    I         I        I        I        I
-----------------------------------------------------------

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS
```

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 PM Peak - Development Flows + Sensitivity Flows
AND FOR TIME PERIOD 990

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.14 | 5.02 | 0.027 | | 0.00 | 0.03 | 0.4 | | 0.20 |
| B-A | 4.03 | 8.20 | 0.491 | | 0.00 | 0.94 | 13.0 | | 0.23 |
| C-A | 2.11 | | | | | | | | |
| C-B | 0.00 | 10.28 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.55 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.16 | 4.84 | 0.034 | | 0.03 | 0.03 | 0.5 | | 0.21 |
| B-A | 4.81 | 8.10 | 0.594 | | 0.94 | 1.40 | 19.7 | | 0.30 |
| C-A | 2.52 | | | | | | | | |
| C-B | 0.00 | 10.25 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.66 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.20 | 4.47 | 0.045 | | 0.03 | 0.05 | 0.7 | | 0.23 |
| B-A | 5.89 | 7.96 | 0.740 | | 1.40 | 2.57 | 34.4 | | 0.45 |
| C-A | 3.08 | | | | | | | | |
| C-B | 0.00 | 10.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.81 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.20 | 4.44 | 0.045 | | 0.05 | 0.05 | 0.7 | | 0.24 |
| B-A | 5.89 | 7.96 | 0.740 | | 2.57 | 2.69 | 39.7 | | 0.48 |
| C-A | 3.08 | | | | | | | | |
| C-B | 0.00 | 10.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.81 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.16 | 4.82 | 0.034 | | 0.05 | 0.04 | 0.6 | | 0.21 |
| B-A | 4.81 | 8.10 | 0.594 | | 2.69 | 1.53 | 24.9 | | 0.32 |
| C-A | 2.52 | | | | | | | | |
| C-B | 0.00 | 10.25 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.66 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.14 | 5.01 | 0.028 | | 0.04 | 0.03 | 0.4 | | 0.21 |
| B-A | 4.03 | 8.20 | 0.491 | | 1.53 | 0.99 | 15.8 | | 0.24 |
| C-A | 2.11 | | | | | | | | |
| C-B | 0.00 | 10.28 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.55 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.9 | * |
| 17.00 | 1.4 | * |
| 17.15 | 2.6 | *** |
| 17.30 | 2.7 | *** |
| 17.45 | 1.5 | ** |
| 18.00 | 1.0 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 15.1 | 10.1 | 3.3 | 0.22 | 3.3 | 0.22 |
| B-A | 441.8 | 294.6 | 147.5 | 0.33 | 147.5 | 0.33 |
| C-A | 231.2 | 154.2 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 60.6 | 40.4 | | | | |
| ALL | 748.8 | 499.2 | 150.8 | 0.20 | 150.8 | 0.20 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2032 AM Peak - No Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.79 | 1.18 | 0.79 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.11 | 10.67 | 7.11 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.13 | 1.69 | 1.13 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) | | |
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 63.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.756 | 0.000 | 0.244 |
| | | 430.0 | 0.0 | 139.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 90.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 AM Peak - No Development
AND FOR TIME PERIOD 990

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 1.74 | 5.73 | 0.304 | | 0.00 | 0.43 | 6.0 | | 0.25 |
| B-A | 5.40 | 8.58 | 0.629 | | 0.00 | 1.61 | 21.6 | | 0.30 |
| C-A | 1.13 | | | | | | | | |
| C-B | 0.00 | 10.24 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.79 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 2.08 | 5.35 | 0.389 | | 0.43 | 0.62 | 8.8 | | 0.30 |
| B-A | 6.44 | 8.49 | 0.759 | | 1.61 | 2.83 | 37.9 | | 0.45 |
| C-A | 1.35 | | | | | | | | |
| C-B | 0.00 | 10.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.94 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 2.55 | 3.48 | 0.732 | | 0.62 | 2.24 | 27.5 | | 0.89 |
| B-A | 7.89 | 8.35 | 0.945 | | 2.83 | 7.91 | 90.2 | | 0.97 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.00 | 10.15 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.16 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 2.55 | 2.68 | 0.952 | | 2.24 | 5.35 | 60.8 | | 2.06 |
| B-A | 7.89 | 8.35 | 0.945 | | 7.91 | 9.82 | 134.3 | | 1.33 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.00 | 10.15 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.16 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 2.08 | 5.08 | 0.410 | | 5.35 | 0.72 | 16.4 | | 0.41 |
| B-A | 6.44 | 8.48 | 0.759 | | 9.82 | 3.57 | 71.7 | | 0.71 |
| C-A | 1.35 | | | | | | | | |
| C-B | 0.00 | 10.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.94 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 1.74 | 5.68 | 0.307 | | 0.72 | 0.45 | 7.2 | | 0.26 |
| B-A | 5.40 | 8.58 | 0.629 | | 3.57 | 1.78 | 29.4 | | 0.34 |
| C-A | 1.13 | | | | | | | | |
| C-B | 0.00 | 10.24 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.79 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 0.4 | |
| 17.00 | 0.6 | * |
| 17.15 | 2.2 | ** |
| 17.30 | 5.3 | ***** |
| 17.45 | 0.7 | * |
| 18.00 | 0.5 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 1.6 | ** |
| 17.00 | 2.8 | *** |
| 17.15 | 7.9 | ******** |
| 17.30 | 9.8 | ********** |
| 17.45 | 3.6 | **** |
| 18.00 | 1.8 | ** |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 191.3 | 127.5 | 126.7 | 0.66 | 126.7 | 0.66 |
| B-A | 591.9 | 394.6 | 385.1 | 0.65 | 385.3 | 0.65 |
| C-A | 123.9 | 82.6 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 86.7 | 57.8 | | | | |
| ALL | 993.8 | 662.5 | 511.8 | 0.52 | 512.0 | 0.52 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2032 AM Peak - With Development

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.80 | 1.20 | 0.80 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.14 | 10.71 | 7.14 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.20 | 1.80 | 1.20 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 64.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.753 | 0.000 | 0.247 |
| | | 430.0 | 0.0 | 141.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 96.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 AM Peak - With Development
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.77 | 5.74 | 0.308 | | 0.00 | 0.44 | 6.1 | | 0.25 |
| B-A | 5.40 | 8.55 | 0.631 | | 0.00 | 1.62 | 21.8 | | 0.30 |
| C-A | 1.20 | | | | | | | | |
| C-B | 0.00 | 10.24 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.80 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 2.11 | 5.35 | 0.395 | | 0.44 | 0.63 | 9.0 | | 0.31 |
| B-A | 6.44 | 8.45 | 0.763 | | 1.62 | 2.87 | 38.4 | | 0.46 |
| C-A | 1.44 | | | | | | | | |
| C-B | 0.00 | 10.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.96 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.59 | 3.39 | 0.764 | | 0.63 | 2.52 | 30.3 | | 0.98 |
| B-A | 7.89 | 8.31 | 0.949 | | 2.87 | 8.15 | 92.3 | | 0.99 |
| C-A | 1.76 | | | | | | | | |
| C-B | 0.00 | 10.14 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.17 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.59 | 2.71 | 0.953 | | 2.52 | 5.50 | 63.6 | | 2.11 |
| B-A | 7.89 | 8.31 | 0.950 | | 8.15 | 10.21 | 139.1 | | 1.38 |
| C-A | 1.76 | | | | | | | | |
| C-B | 0.00 | 10.14 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.17 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 2.11 | 5.05 | 0.418 | | 5.50 | 0.75 | 17.2 | | 0.42 |
| B-A | 6.44 | 8.45 | 0.763 | | 10.21 | 3.65 | 74.6 | | 0.74 |
| C-A | 1.44 | | | | | | | | |
| C-B | 0.00 | 10.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.96 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 1.77 | 5.68 | 0.312 | | 0.75 | 0.46 | 7.3 | | 0.26 |
| B-A | 5.40 | 8.55 | 0.631 | | 3.65 | 1.80 | 29.9 | | 0.34 |
| C-A | 1.20 | | | | | | | | |
| C-B | 0.00 | 10.24 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.80 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 0.4 | |
| 07.45 | 0.6 | * |
| 08.00 | 2.5 | *** |
| 08.15 | 5.5 | ***** |
| 08.30 | 0.7 | * |
| 08.45 | 0.5 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 1.6 | ** |
| 07.45 | 2.9 | *** |
| 08.00 | 8.1 | ******** |
| 08.15 | 10.2 | ********** |
| 08.30 | 3.6 | **** |
| 08.45 | 1.8 | ** |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.0 |
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.0 |
| 08.45 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 194.1 | 129.4 | 133.6 | 0.69 | 133.6 | 0.69 |
| B-A | 591.9 | 394.6 | 396.1 | 0.67 | 396.3 | 0.67 |
| C-A | 132.1 | 88.1 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 88.1 | 58.7 | | | | |
| ALL | 1006.2 | 670.8 | 529.7 | 0.53 | 529.9 | 0.53 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2032 AM Peak - Development Flows + Sensitivity Flows

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 1.00 | 1.50 | 1.00 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.34 | 11.01 | 7.34 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.60 | 2.40 | 1.60 |

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 80.0 |
| | | ( 0.0) | ( 0.0) | ( 14.0) |
| | ARM B | 0.733 | 0.000 | 0.267 |
| | | 430.0 | 0.0 | 157.0 |
| | | ( 10.0) | ( 0.0) | ( 33.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 128.0 | 0.0 | 0.0 |
| | | ( 60.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 AM Peak - Development Flows + Sensitivity Flows
AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| B-C | 1.97 | 5.75 | 0.342 | | 0.00 | 0.51 | 7.1 | | 0.26 |
| B-A | 5.40 | 8.31 | 0.650 | | 0.00 | 1.74 | 23.3 | | 0.32 |
| C-A | 1.61 | | | | | | | | |
| C-B | 0.00 | 10.19 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.00 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| B-C | 2.35 | 5.30 | 0.444 | | 0.51 | 0.77 | 10.9 | | 0.34 |
| B-A | 6.44 | 8.18 | 0.788 | | 1.74 | 3.23 | 42.5 | | 0.52 |
| C-A | 1.92 | | | | | | | | |
| C-B | 0.00 | 10.14 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.20 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 2.88 | 2.89 | 0.982 | | 0.77 | 6.10 | 60.8 | | 1.92 |
| B-A | 7.89 | 8.00 | 0.982 | | 3.23 | 10.18 | 110.3 | | 1.20 |
| C-A | 2.35 | | | | | | | | |
| C-B | 0.00 | 10.07 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.47 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 2.88 | 3.07 | 0.939 | | 6.10 | 7.30 | 101.1 | | 2.66 |
| B-A | 7.89 | 8.00 | 0.987 | | 10.18 | 13.80 | 181.6 | | 1.81 |
| C-A | 2.35 | | | | | | | | |
| C-B | 0.00 | 10.07 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.47 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 2.35 | 4.69 | 0.501 | | 7.30 | 1.07 | 28.1 | | 0.62 |
| B-A | 6.44 | 8.18 | 0.788 | | 13.80 | 4.43 | 105.7 | | 1.07 |
| C-A | 1.92 | | | | | | | | |
| C-B | 0.00 | 10.14 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.20 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 1.97 | 5.68 | 0.347 | | 1.07 | 0.55 | 8.7 | | 0.27 |
| B-A | 5.40 | 8.31 | 0.650 | | 4.43 | 1.97 | 33.5 | | 0.38 |
| C-A | 1.61 | | | | | | | | |
| C-B | 0.00 | 10.19 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 1.00 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 0.5 | * |
| 07.45 | 0.8 | * |
| 08.00 | 6.1 | ****** |
| 08.15 | 7.3 | ******* |
| 08.30 | 1.1 | * |
| 08.45 | 0.5 | * |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 07.30 | 1.7 | ** |
| 07.45 | 3.2 | *** |
| 08.00 | 10.2 | ********** |
| 08.15 | 13.8 | ************** |
| 08.30 | 4.4 | **** |
| 08.45 | 2.0 | ** |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.0 |
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.0 |
| 08.45 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-C | 216.1 | 144.1 | 216.7 | 1.00 | 216.7 | 1.00 |
| B-A | 591.9 | 394.6 | 496.8 | 0.84 | 497.0 | 0.84 |
| C-A | 176.2 | 117.5 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 110.1 | 73.4 | | | | |
| ALL | 1094.3 | 729.5 | 713.4 | 0.65 | 713.7 | 0.65 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2032 PM Peak - No Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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



DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.28 | 0.41 | 0.28 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.45 | 6.67 | 4.45 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.58 | 2.36 | 1.58 |

| TIME | FROM/TO | TURNING PROPORTIONS<br>TURNING COUNTS (VEH/HR)<br>(PERCENTAGE OF H.V.S)<br>ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 22.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.938 | 0.000 | 0.062 |
| | | 334.0 | 0.0 | 22.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 126.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 PM Peak - No Development
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.28 | 5.05 | 0.055 | | 0.00 | 0.06 | 0.8 | | 0.21 |
| B-A | 4.19 | 8.37 | 0.501 | | 0.00 | 0.97 | 13.5 | | 0.23 |
| C-A | 1.58 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.28 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.33 | 4.88 | 0.068 | | 0.06 | 0.07 | 1.0 | | 0.22 |
| B-A | 5.00 | 8.30 | 0.603 | | 0.97 | 1.45 | 20.4 | | 0.30 |
| C-A | 1.89 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.33 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.40 | 4.51 | 0.089 | | 0.07 | 0.10 | 1.4 | | 0.24 |
| B-A | 6.13 | 8.21 | 0.747 | | 1.45 | 2.66 | 35.5 | | 0.45 |
| C-A | 2.31 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.40 | 4.48 | 0.090 | | 0.10 | 0.10 | 1.5 | | 0.25 |
| B-A | 6.13 | 8.21 | 0.747 | | 2.66 | 2.78 | 41.0 | | 0.47 |
| C-A | 2.31 | | | | | | | | |
| C-B | 0.00 | 10.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.33 | 4.85 | 0.068 | | 0.10 | 0.07 | 1.1 | | 0.22 |
| B-A | 5.00 | 8.30 | 0.603 | | 2.78 | 1.59 | 25.8 | | 0.32 |
| C-A | 1.89 | | | | | | | | |
| C-B | 0.00 | 10.35 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.33 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.28 | 5.03 | 0.055 | | 0.07 | 0.06 | 0.9 | | 0.21 |
| B-A | 4.19 | 8.37 | 0.501 | | 1.59 | 1.03 | 16.4 | | 0.24 |
| C-A | 1.58 | | | | | | | | |
| C-B | 0.00 | 10.37 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.28 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 1.0 | * |
| 17.00 | 1.5 | * |
| 17.15 | 2.7 | *** |
| 17.30 | 2.8 | *** |
| 17.45 | 1.6 | ** |
| 18.00 | 1.0 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 30.3 | 20.2 | 6.8 | 0.22 | 6.8 | 0.22 |
| B-A | 459.7 | 306.5 | 152.6 | 0.33 | 152.7 | 0.33 |
| C-A | 173.4 | 115.6 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 30.3 | 20.2 | | | | |
| ALL | 693.7 | 462.5 | 159.4 | 0.23 | 159.5 | 0.23 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2032 PM Peak - With Development

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.29 | 0.43 | 0.29 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.46 | 6.69 | 4.46 |
| ARM C | 15.00 | 45.00 | 75.00 | 1.61 | 2.42 | 1.61 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS<br>TURNING COUNTS (VEH/HR)<br>(PERCENTAGE OF H.V.S) | | |
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 23.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.936 | 0.000 | 0.064 |
| | | 334.0 | 0.0 | 23.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 129.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 PM Peak - With Development
AND FOR TIME PERIOD 2

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.29 | 5.05 | 0.057 | | 0.00 | 0.06 | 0.9 | | 0.21 |
| B-A | 4.19 | 8.36 | 0.501 | | 0.00 | 0.97 | 13.5 | | 0.23 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.00 | 10.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.29 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.34 | 4.87 | 0.071 | | 0.06 | 0.08 | 1.1 | | 0.22 |
| B-A | 5.00 | 8.29 | 0.604 | | 0.97 | 1.46 | 20.4 | | 0.30 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.00 | 10.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.34 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.42 | 4.51 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.24 |
| B-A | 6.13 | 8.20 | 0.748 | | 1.46 | 2.67 | 35.7 | | 0.45 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.00 | 10.32 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.42 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.42 | 4.47 | 0.094 | | 0.10 | 0.10 | 1.5 | | 0.25 |
| B-A | 6.13 | 8.20 | 0.748 | | 2.67 | 2.80 | 41.2 | | 0.48 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.00 | 10.32 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.42 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.34 | 4.85 | 0.071 | | 0.10 | 0.08 | 1.2 | | 0.22 |
| B-A | 5.00 | 8.29 | 0.604 | | 2.80 | 1.59 | 26.0 | | 0.32 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.00 | 10.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.34 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.29 | 5.03 | 0.057 | | 0.08 | 0.06 | 1.0 | | 0.21 |
| B-A | 4.19 | 8.36 | 0.501 | | 1.59 | 1.04 | 16.5 | | 0.24 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.00 | 10.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.29 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 1.0 | * |
| 17.00 | 1.5 | * |
| 17.15 | 2.7 | *** |
| 17.30 | 2.8 | *** |
| 17.45 | 1.6 | ** |
| 18.00 | 1.0 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 31.7 | 21.1 | 7.1 | 0.22 | 7.1 | 0.22 |
| B-A | 459.7 | 306.5 | 153.3 | 0.33 | 153.4 | 0.33 |
| C-A | 177.6 | 118.4 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 31.7 | 21.1 | | | | |
| ALL | 700.6 | 467.1 | 160.4 | 0.23 | 160.5 | 0.23 |

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

END OF JOB

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 602.92 | 0.22 | 0.09 |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|---|---|---|---|---|
| 476.98 | 0.21 | 0.08 | 0.13 | 0.30 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 689.79 | 0.25 | 0.25 |

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

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

Demand set: 2032 PM Peak - Development Flows + Sensitivity Flows

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 0.49 | 0.73 | 0.49 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.66 | 6.99 | 4.66 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.01 | 3.02 | 2.01 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) | | |
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 39.0 |
| | | ( 0.0) | ( 0.0) | ( 35.0) |
| | ARM B | 0.895 | 0.000 | 0.105 |
| | | 334.0 | 0.0 | 39.0 |
| | | ( 19.0) | ( 0.0) | ( 50.0) |
| | ARM C | 1.000 | 0.000 | 0.000 |
| | | 161.0 | 0.0 | 0.0 |
| | | ( 15.0) | ( 0.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2032 PM Peak - Development Flows + Sensitivity Flows
AND FOR TIME PERIOD *****

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| B-C | 0.49 | 5.01 | 0.098 | | 0.00 | 0.11 | 1.5 | | 0.22 |
| B-A | 4.19 | 8.23 | 0.509 | | 0.00 | 1.00 | 13.9 | | 0.24 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.00 | 10.30 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.49 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 0.58 | 4.82 | 0.121 | | 0.11 | 0.14 | 2.0 | | 0.24 |
| B-A | 5.00 | 8.14 | 0.615 | | 1.00 | 1.52 | 21.3 | | 0.31 |
| C-A | 2.41 | | | | | | | | |
| C-B | 0.00 | 10.27 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.58 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 0.72 | 4.41 | 0.162 | | 0.14 | 0.19 | 2.7 | | 0.27 |
| B-A | 6.13 | 8.01 | 0.765 | | 1.52 | 2.89 | 38.2 | | 0.48 |
| C-A | 2.95 | | | | | | | | |
| C-B | 0.00 | 10.23 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.72 | | | | | | | | |



| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 0.72 | 4.36 | 0.164 | | 0.19 | 0.19 | 2.9 | | 0.27 |
| B-A | 6.13 | 8.01 | 0.765 | | 2.89 | 3.05 | 44.8 | | 0.52 |
| C-A | 2.95 | | | | | | | | |
| C-B | 0.00 | 10.23 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.72 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 0.58 | 4.79 | 0.122 | | 0.19 | 0.14 | 2.2 | | 0.24 |
| B-A | 5.00 | 8.14 | 0.615 | | 3.05 | 1.68 | 27.4 | | 0.34 |
| C-A | 2.41 | | | | | | | | |
| C-B | 0.00 | 10.27 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.58 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 0.49 | 4.99 | 0.098 | | 0.14 | 0.11 | 1.7 | | 0.22 |
| B-A | 4.19 | 8.23 | 0.509 | | 1.68 | 1.07 | 17.1 | | 0.25 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.00 | 10.30 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| A-B | 0.00 | | | | | | | | |
| A-C | 0.49 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 16.45 | 1.0 | * |
| 17.00 | 1.5 | ** |
| 17.15 | 2.9 | *** |
| 17.30 | 3.1 | *** |
| 17.45 | 1.7 | ** |
| 18.00 | 1.1 | * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 53.7 | 35.8 | 13.0 | 0.24 | 13.0 | 0.24 |
| B-A | 459.7 | 306.5 | 162.7 | 0.35 | 162.8 | 0.35 |
| C-A | 221.6 | 147.7 | | | | |
| C-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 53.7 | 35.8 | | | | |
| ALL | 788.7 | 525.8 | 175.7 | 0.22 | 175.8 | 0.22 |

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

END OF JOB

# APPENDIX 13-D
# ARCADY RESULTS

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited            Tel:   +44 (0) 1344 770018
Crowthorne House       Fax:   +44 (0) 1344 770864
Nine Mile Ride         Email: softwarebureau@trl.co.uk
Wokingham, Berks.      Web:   www.trlsoftware.co.uk
RG40 3GA,UK

 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------

 Run with file:-
 "C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2016 AM Peak - Existing Flows.vai"
(drive-on-the-left ) at 15:08:17 on Thursday, 1 December 2016


.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width       L = effective flare length          D = inscribed circle diameter
 E = entry width               R = entry radius                    PHI = entry angle


.TRAFFIC DEMAND DATA
 -------------------

(Only sets included in the current run are shown)
```

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

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2016 AM Peak - Existing Flows

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.86 | 5.79 | 3.86 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.70 | 2.55 | 1.70 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.11 | 4.67 | 3.11 |

DEMAND SET TITLE: 2016 AM Peak - Existing Flows

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.550 | 0.450 |
| | | 0.0 | 170.0 | 139.0 |
| | | ( 0.0) | ( 7.0) | ( 16.0) |
| | ARM B | 0.353 | 0.000 | 0.647 |
| | | 48.0 | 0.0 | 88.0 |
| | | ( 15.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.253 | 0.747 | 0.000 |
| | | 63.0 | 186.0 | 0.0 |
| | | ( 2.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| ARM A | 3.86 | 26.28 | 0.147 | | 0.0 | 0.2 | 2.5 | | 0.04 |
| ARM B | 1.70 | 26.95 | 0.063 | | 0.0 | 0.1 | 1.0 | | 0.04 |
| ARM C | 3.11 | 25.66 | 0.121 | | 0.0 | 0.1 | 2.0 | | 0.04 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| ARM A | 4.61 | 26.03 | 0.177 | | 0.2 | 0.2 | 3.2 | | 0.05 |
| ARM B | 2.03 | 26.76 | 0.076 | | 0.1 | 0.1 | 1.2 | | 0.04 |
| ARM C | 3.72 | 25.59 | 0.145 | | 0.1 | 0.2 | 2.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 5.65 | 25.68 | 0.220 | | 0.2 | 0.3 | 4.2 | | 0.05 |
| ARM B | 2.49 | 26.49 | 0.094 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM C | 4.55 | 25.50 | 0.179 | | 0.2 | 0.2 | 3.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 5.65 | 25.68 | 0.220 | | 0.3 | 0.3 | 4.2 | | 0.05 |
| ARM B | 2.49 | 26.49 | 0.094 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM C | 4.55 | 25.50 | 0.179 | | 0.2 | 0.2 | 3.3 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 4.61 | 26.03 | 0.177 | | 0.3 | 0.2 | 3.3 | | 0.05 |
| ARM B | 2.03 | 26.76 | 0.076 | | 0.1 | 0.1 | 1.2 | | 0.04 |
| ARM C | 3.72 | 25.59 | 0.145 | | 0.2 | 0.2 | 2.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 3.86 | 26.28 | 0.147 | | 0.2 | 0.2 | 2.6 | | 0.04 |
| ARM B | 1.70 | 26.95 | 0.063 | | 0.1 | 0.1 | 1.0 | | 0.04 |
| ARM C | 3.11 | 25.66 | 0.121 | | 0.2 | 0.1 | 2.1 | | 0.04 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |

.  QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 423.7 | 282.5 | 20.0 | 0.05 | 20.0 | 0.05 |
| B | 186.5 | 124.3 | 7.6 | 0.04 | 7.6 | 0.04 |
| C | 341.4 | 227.6 | 15.7 | 0.05 | 15.7 | 0.05 |
| ALL | 951.6 | 634.4 | 43.3 | 0.05 | 43.3 | 0.05 |

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

END OF JOB

```
__________________ A R C A D Y  6 __________________

     ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


     Analysis Program: Release 4.0 (FEBRUARY 2006)

            (c) Copyright TRL Limited, 2004

     Adapted from ARCADY/3 which is Crown Copyright
        by permission of the controller of HMSO
______________________________________________________

       For sales and distribution information,
       program advice and maintenance, contact:

 TRL Limited              Tel:   +44 (0) 1344 770018
 Crowthorne House         Fax:   +44 (0) 1344 770864
 Nine Mile Ride           Email: softwarebureau@trl.co.uk
 Wokingham, Berks.        Web:   www.trlsoftware.co.uk
 RG40 3GA,UK

 ---------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 ---------------------------------------------------------------------------------

 Run with file:-
 "C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2017 AM Peak - No Development.vai"
(drive-on-the-left ) at 15:08:54 on Thursday, 1 December 2016


.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width       L = effective flare length          D = inscribed circle diameter
 E = entry width               R = entry radius                    PHI = entry angle


.TRAFFIC DEMAND DATA
 ------------------

(Only sets included in the current run are shown)
```

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

```
.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD  -  90   MINUTES.
 LENGTH OF TIME SEGMENT -  15   MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA


 DEMAND SET TITLE: 2017 AM Peak - No Development
 -----------------------------------------------------------------------------
 I       I   NUMBER OF MINUTES FROM START WHEN    I   RATE OF FLOW (VEH/MIN) I
 I  ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP  I AFTER I
 I       I  TO RISE    I  IS REACHED IFALLING   I  PEAK   I OF PEAK I PEAK  I
 -----------------------------------------------------------------------------
 I ARM A I     15.00   I     45.00   I    75.00   I  3.89  I   5.83  I  3.89 I
 I ARM B I     15.00   I     45.00   I    75.00   I  1.71  I   2.57  I  1.71 I
 I ARM C I     15.00   I     45.00   I    75.00   I  3.13  I   4.69  I  3.13 I
 -----------------------------------------------------------------------------


 DEMAND SET TITLE: 2017 AM Peak - No Development
.-----------------------------------------------------------
 I                    I         TURNING PROPORTIONS        I
 I                    I         TURNING COUNTS (VEH/HR)    I
 I                    I        (PERCENTAGE OF H.V.S)       I
 I                    -------------------------------------
 I        TIME        I FROM/TO I  ARM A I  ARM B I  ARM C I
 -----------------------------------------------------------
 I   07.15 - 08.45    I         I        I        I        I
 I                    I  ARM A  I  0.000 I  0.550 I  0.450 I
 I                    I         I    0.0 I  171.0 I  140.0 I
 I                    I         I (  0.0)I (  7.0)I ( 16.0)I
 I                    I         I        I        I        I
 I                    I  ARM B  I  0.350 I  0.000 I  0.650 I
 I                    I         I   48.0 I    0.0 I   89.0 I
 I                    I         I ( 15.0)I (  0.0)I ( 24.0)I
 I                    I         I        I        I        I
 I                    I  ARM C  I  0.252 I  0.748 I  0.000 I
 I                    I         I   63.0 I  187.0 I    0.0 I
 I                    I         I (  2.0)I ( 10.0)I (  0.0)I
 I                    I         I        I        I        I
 -----------------------------------------------------------

.         QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
          -------------------------------------------------------

.----------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN)  (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 07.15-07.30                                                                                                      I
 I ARM A       3.89     26.27   0.148                   0.0    0.2        2.6                              0.04      I
 I ARM B       1.71     26.94   0.064                   0.0    0.1        1.0                              0.04      I
 I ARM C       3.13     25.66   0.122                   0.0    0.1        2.0                              0.04      I
 I                                                                                                                  I
 ----------------------------------------------------------------------------------------------------------------------
.----------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN)  (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 07.30-07.45                                                                                                      I
 I ARM A       4.64     26.02   0.178                   0.2    0.2        3.2                              0.05      I
 I ARM B       2.04     26.74   0.076                   0.1    0.1        1.2                              0.04      I
 I ARM C       3.73     25.59   0.146                   0.1    0.2        2.5                              0.05      I
 I                                                                                                                  I
 ----------------------------------------------------------------------------------------------------------------------
.----------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN)  (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 07.45-08.00                                                                                                      I
 I ARM A       5.69     25.67   0.221                   0.2    0.3        4.2                              0.05      I
 I ARM B       2.50     26.47   0.095                   0.1    0.1        1.5                              0.04      I
 I ARM C       4.57     25.49   0.179                   0.2    0.2        3.2                              0.05      I
 I                                                                                                                  I
 ----------------------------------------------------------------------------------------------------------------------
```

```
.-----------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY    FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/     PER ARRIVING  I
 I                               (RFC)   (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT)   VEHICLE (MIN) I
 I 08.00-08.15                                                                                                  I
 I ARM A        5.69     25.67   0.222                  0.3    0.3        4.3                            0.05     I
 I ARM B        2.50     26.47   0.095                  0.1    0.1        1.6                            0.04     I
 I ARM C        4.57     25.49   0.179                  0.2    0.2        3.3                            0.05     I
 I                                                                                                              I
 ------------------------------------------------------------------------------------------------------------------
.-----------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY    FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/     PER ARRIVING  I
 I                               (RFC)   (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT)   VEHICLE (MIN) I
 I 08.15-08.30                                                                                                  I
 I ARM A        4.64     26.02   0.178                  0.3    0.2        3.3                            0.05     I
 I ARM B        2.04     26.74   0.076                  0.1    0.1        1.3                            0.04     I
 I ARM C        3.73     25.59   0.146                  0.2    0.2        2.6                            0.05     I
 I                                                                                                              I
 ------------------------------------------------------------------------------------------------------------------
.-----------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY    FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/     PER ARRIVING  I
 I                               (RFC)   (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT)   VEHICLE (MIN) I
 I 08.30-08.45                                                                                                  I
 I ARM A        3.89     26.27   0.148                  0.2    0.2        2.6                            0.04     I
 I ARM B        1.71     26.94   0.064                  0.1    0.1        1.0                            0.04     I
 I ARM C        3.13     25.66   0.122                  0.2    0.1        2.1                            0.04     I
 I                                                                                                              I
 ------------------------------------------------------------------------------------------------------------------
```

```
.QUEUE AT ARM A
 --------------

  TIME SEGMENT   NO. OF
   ENDING       VEHICLES
                IN QUEUE

   07.30           0.2
   07.45           0.2
   08.00           0.3
   08.15           0.3
   08.30           0.2
   08.45           0.2

.QUEUE AT ARM B
 --------------

  TIME SEGMENT   NO. OF
   ENDING       VEHICLES
                IN QUEUE

   07.30           0.1
   07.45           0.1
   08.00           0.1
   08.15           0.1
   08.30           0.1
   08.45           0.1

.QUEUE AT ARM C
 --------------

  TIME SEGMENT   NO. OF
   ENDING       VEHICLES
                IN QUEUE

   07.30           0.1
   07.45           0.2
   08.00           0.2
   08.15           0.2
   08.30           0.2
   08.45           0.1
```

.                QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 426.4 | 284.3 | 20.2 | 0.05 | 20.2 | 0.05 |
| B | 187.9 | 125.2 | 7.6 | 0.04 | 7.6 | 0.04 |
| C | 342.8 | 228.5 | 15.8 | 0.05 | 15.8 | 0.05 |
| ALL | 957.1 | 638.1 | 43.6 | 0.05 | 43.6 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2017 AM Peak - With Development.vai"
(drive-on-the-left ) at 15:09:30 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width       L = effective flare length          D = inscribed circle diameter
E = entry width               R = entry radius                    PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2017 AM Peak - With Development

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.90 | 5.85 | 3.90 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.91 | 4.37 | 2.91 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.13 | 4.69 | 3.13 |

DEMAND SET TITLE: 2017 AM Peak - With Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.548 | 0.452 |
| | | 0.0 | 171.0 | 141.0 |
| | | ( 0.0) | ( 7.0) | ( 16.0) |
| | ARM B | 0.206 | 0.386 | 0.408 |
| | | 48.0 | 90.0 | 95.0 |
| | | ( 15.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.252 | 0.748 | 0.000 |
| | | 63.0 | 187.0 | 0.0 |
| | | ( 2.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| ARM A | 3.90 | 25.70 | 0.152 | | 0.0 | 0.2 | 2.6 | | 0.05 |
| ARM B | 2.91 | 28.84 | 0.101 | | 0.0 | 0.1 | 1.7 | | 0.04 |
| ARM C | 3.13 | 25.08 | 0.125 | | 0.0 | 0.1 | 2.1 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| ARM A | 4.66 | 25.33 | 0.184 | | 0.2 | 0.2 | 3.3 | | 0.05 |
| ARM B | 3.48 | 28.62 | 0.122 | | 0.1 | 0.1 | 2.0 | | 0.04 |
| ARM C | 3.73 | 24.90 | 0.150 | | 0.1 | 0.2 | 2.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 5.70 | 24.83 | 0.230 | | 0.2 | 0.3 | 4.4 | | 0.05 |
| ARM B | 4.26 | 28.33 | 0.150 | | 0.1 | 0.2 | 2.6 | | 0.04 |
| ARM C | 4.57 | 24.65 | 0.185 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 5.70 | 24.83 | 0.230 | | 0.3 | 0.3 | 4.5 | | 0.05 |
| ARM B | 4.26 | 28.33 | 0.150 | | 0.2 | 0.2 | 2.6 | | 0.04 |
| ARM C | 4.57 | 24.65 | 0.185 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 4.66 | 25.33 | 0.184 | | 0.3 | 0.2 | 3.4 | | 0.05 |
| ARM B | 3.48 | 28.62 | 0.122 | | 0.2 | 0.1 | 2.1 | | 0.04 |
| ARM C | 3.73 | 24.90 | 0.150 | | 0.2 | 0.2 | 2.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 3.90 | 25.70 | 0.152 | | 0.2 | 0.2 | 2.7 | | 0.05 |
| ARM B | 2.91 | 28.83 | 0.101 | | 0.1 | 0.1 | 1.7 | | 0.04 |
| ARM C | 3.13 | 25.08 | 0.125 | | 0.2 | 0.1 | 2.2 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 427.8 | 285.2 | 21.0 | 0.05 | 21.0 | 0.05 |
| B | 319.5 | 213.0 | 12.8 | 0.04 | 12.8 | 0.04 |
| C | 342.8 | 228.5 | 16.3 | 0.05 | 16.3 | 0.05 |
| ALL | 1090.1 | 726.7 | 50.1 | 0.05 | 50.1 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2022 AM Peak - No Development.vai"
(drive-on-the-left ) at 15:10:19 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
  RUN TITLE: Huntstown Quarry
   LOCATION: Huntstown
       DATE: 01/12/16
     CLIENT: Roadstone
 ENUMERATOR: Roadplan
 JOB NUMBER: 16047-04
     STATUS: TIA
DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width      L = effective flare length         D = inscribed circle diameter
E = entry width              R = entry radius                   PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

```
.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD  -  90   MINUTES.
 LENGTH OF TIME SEGMENT -  15   MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA


 DEMAND SET TITLE: 2022 AM Peak - No Development
 -----------------------------------------------------------------------------
 I       I   NUMBER OF MINUTES FROM START WHEN     I   RATE OF FLOW (VEH/MIN) I
 I  ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP  I AFTER I
 I       I   TO RISE   I  IS REACHED IFALLING    I  PEAK   I OF PEAK I PEAK   I
 -----------------------------------------------------------------------------
 I ARM A I     15.00   I     45.00   I    75.00   I  4.03  I   6.04  I  4.03 I
 I ARM B I     15.00   I     45.00   I    75.00   I  1.77  I   2.66  I  1.77 I
 I ARM C I     15.00   I     45.00   I    75.00   I  3.25  I   4.88  I  3.25 I
 -----------------------------------------------------------------------------

  DEMAND SET TITLE: 2022 AM Peak - No Development
.-----------------------------------------------------------
 I                    I         TURNING PROPORTIONS        I
 I                    I         TURNING COUNTS (VEH/HR)    I
 I                    I        (PERCENTAGE OF H.V.S)       I
 I                    -------------------------------------
 I        TIME        I FROM/TO I  ARM A I  ARM B I  ARM C I
 -----------------------------------------------------------
 I   07.15 - 08.45    I         I        I        I        I
 I                    I  ARM A  I  0.000 I  0.550 I  0.450 I
 I                    I         I    0.0 I  177.0 I  145.0 I
 I                    I         I (  0.0)I (  7.0)I ( 16.0)I
 I                    I         I        I        I        I
 I                    I  ARM B  I  0.352 I  0.000 I  0.648 I
 I                    I         I   50.0 I    0.0 I   92.0 I
 I                    I         I ( 15.0)I (  0.0)I ( 24.0)I
 I                    I         I        I        I        I
 I                    I  ARM C  I  0.254 I  0.746 I  0.000 I
 I                    I         I   66.0 I  194.0 I    0.0 I
 I                    I         I (  2.0)I ( 10.0)I (  0.0)I
 I                    I         I        I        I        I
 -----------------------------------------------------------

.         QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
          -------------------------------------------------------

.-------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/     (VEH.MIN/      PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 07.15-07.30                                                                                                   I
 I ARM A       4.03     26.23    0.153                  0.0    0.2        2.7                            0.04      I
 I ARM B       1.77     26.91    0.066                  0.0    0.1        1.0                            0.04      I
 I ARM C       3.25     25.65    0.127                  0.0    0.1        2.1                            0.04      I
 I                                                                                                               I
 -------------------------------------------------------------------------------------------------------------------
.-------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/     (VEH.MIN/      PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 07.30-07.45                                                                                                   I
 I ARM A       4.81     25.96    0.185                  0.2    0.2        3.4                            0.05      I
 I ARM B       2.12     26.70    0.079                  0.1    0.1        1.3                            0.04      I
 I ARM C       3.88     25.57    0.152                  0.1    0.2        2.6                            0.05      I
 I                                                                                                               I
 -------------------------------------------------------------------------------------------------------------------
.-------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/     (VEH.MIN/      PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 07.45-08.00                                                                                                   I
 I ARM A       5.89     25.60    0.230                  0.2    0.3        4.4                            0.05      I
 I ARM B       2.60     26.42    0.098                  0.1    0.1        1.6                            0.04      I
 I ARM C       4.75     25.48    0.187                  0.2    0.2        3.4                            0.05      I
 I                                                                                                               I
 -------------------------------------------------------------------------------------------------------------------
```

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 5.89 | 25.60 | 0.230 | | 0.3 | 0.3 | 4.5 | | 0.05 |
| ARM B | 2.60 | 26.42 | 0.098 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM C | 4.75 | 25.48 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 4.81 | 25.96 | 0.185 | | 0.3 | 0.2 | 3.5 | | 0.05 |
| ARM B | 2.12 | 26.70 | 0.079 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM C | 3.88 | 25.57 | 0.152 | | 0.2 | 0.2 | 2.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 4.03 | 26.22 | 0.154 | | 0.2 | 0.2 | 2.8 | | 0.05 |
| ARM B | 1.77 | 26.90 | 0.066 | | 0.1 | 0.1 | 1.1 | | 0.04 |
| ARM C | 3.25 | 25.65 | 0.127 | | 0.2 | 0.1 | 2.2 | | 0.04 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |

.                 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 441.5 | 294.4 | 21.1 | 0.05 | 21.1 | 0.05 |
| B | 194.7 | 129.8 | 7.9 | 0.04 | 7.9 | 0.04 |
| C | 356.5 | 237.7 | 16.5 | 0.05 | 16.5 | 0.05 |
| ALL | 992.8 | 661.8 | 45.6 | 0.05 | 45.6 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited            Tel:   +44 (0) 1344 770018
Crowthorne House       Fax:   +44 (0) 1344 770864
Nine Mile Ride         Email: softwarebureau@trl.co.uk
Wokingham, Berks.      Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 ---------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 ---------------------------------------------------------------------------------

 Run with file:-
 "C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2022 AM Peak - With Development.vai"
(drive-on-the-left ) at 15:11:06 on Thursday, 1 December 2016
```



```
.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width       L = effective flare length          D = inscribed circle diameter
 E = entry width               R = entry radius                    PHI = entry angle


.TRAFFIC DEMAND DATA
 -------------------

(Only sets included in the current run are shown)
```

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

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2022 AM Peak - With Development

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.03 | 6.04 | 4.03 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.77 | 2.66 | 1.77 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.25 | 4.88 | 3.25 |

DEMAND SET TITLE: 2022 AM Peak - With Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.550 | 0.450 |
| | | 0.0 | 177.0 | 145.0 |
| | | ( 0.0) | ( 7.0) | ( 16.0) |
| | ARM B | 0.352 | 0.000 | 0.648 |
| | | 50.0 | 0.0 | 92.0 |
| | | ( 15.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.254 | 0.746 | 0.000 |
| | | 66.0 | 194.0 | 0.0 |
| | | ( 2.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| ARM A | 4.03 | 26.23 | 0.153 | | 0.0 | 0.2 | 2.7 | | 0.04 |
| ARM B | 1.77 | 26.91 | 0.066 | | 0.0 | 0.1 | 1.0 | | 0.04 |
| ARM C | 3.25 | 25.65 | 0.127 | | 0.0 | 0.1 | 2.1 | | 0.04 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| ARM A | 4.81 | 25.96 | 0.185 | | 0.2 | 0.2 | 3.4 | | 0.05 |
| ARM B | 2.12 | 26.70 | 0.079 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM C | 3.88 | 25.57 | 0.152 | | 0.1 | 0.2 | 2.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 5.89 | 25.60 | 0.230 | | 0.2 | 0.3 | 4.4 | | 0.05 |
| ARM B | 2.60 | 26.42 | 0.098 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM C | 4.75 | 25.48 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 5.89 | 25.60 | 0.230 | | 0.3 | 0.3 | 4.5 | | 0.05 |
| ARM B | 2.60 | 26.42 | 0.098 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM C | 4.75 | 25.48 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 4.81 | 25.96 | 0.185 | | 0.3 | 0.2 | 3.5 | | 0.05 |
| ARM B | 2.12 | 26.70 | 0.079 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM C | 3.88 | 25.57 | 0.152 | | 0.2 | 0.2 | 2.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 4.03 | 26.22 | 0.154 | | 0.2 | 0.2 | 2.8 | | 0.05 |
| ARM B | 1.77 | 26.90 | 0.066 | | 0.1 | 0.1 | 1.1 | | 0.04 |
| ARM C | 3.25 | 25.65 | 0.127 | | 0.2 | 0.1 | 2.2 | | 0.04 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 441.5 | 294.4 | 21.1 | 0.05 | 21.1 | 0.05 |
| B | 194.7 | 129.8 | 7.9 | 0.04 | 7.9 | 0.04 |
| C | 356.5 | 237.7 | 16.5 | 0.05 | 16.5 | 0.05 |
| ALL | 992.8 | 661.8 | 45.6 | 0.05 | 45.6 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited            Tel:   +44 (0) 1344 770018
Crowthorne House       Fax:   +44 (0) 1344 770864
Nine Mile Ride         Email: softwarebureau@trl.co.uk
Wokingham, Berks.      Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2022 AM Peak - With Development + Sensitivity Flows.vai"
(drive-on-the-left ) at 15:12:09 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
  RUN TITLE: Huntstown Quarry
   LOCATION: Huntstown
       DATE: 17/07/16
     CLIENT: Roadstone
 ENUMERATOR: Roadplan
 JOB NUMBER: 16047-02
     STATUS: TIA
DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width      L = effective flare length        D = inscribed circle diameter
E = entry width              R = entry radius                  PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2022 AM Peak - With Development + Sensitivity Flows

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.31 | 6.47 | 4.31 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.06 | 3.09 | 2.06 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.25 | 4.88 | 3.25 |

DEMAND SET TITLE: 2022 AM Peak - With Development + Sensitivity Flows

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.513 | 0.487 |
| | | 0.0 | 177.0 | 168.0 |
| | | ( 0.0) | ( 7.0) | ( 16.0) |
| | ARM B | 0.303 | 0.000 | 0.697 |
| | | 50.0 | 0.0 | 115.0 |
| | | ( 15.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.254 | 0.746 | 0.000 |
| | | 66.0 | 194.0 | 0.0 |
| | | ( 2.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| ARM A | 4.31 | 26.15 | 0.165 | | 0.0 | 0.2 | 2.9 | | 0.05 |
| ARM B | 2.06 | 26.65 | 0.077 | | 0.0 | 0.1 | 1.2 | | 0.04 |
| ARM C | 3.25 | 25.65 | 0.127 | | 0.0 | 0.1 | 2.1 | | 0.04 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| ARM A | 5.15 | 25.88 | 0.199 | | 0.2 | 0.2 | 3.7 | | 0.05 |
| ARM B | 2.46 | 26.41 | 0.093 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM C | 3.88 | 25.57 | 0.152 | | 0.1 | 0.2 | 2.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 6.31 | 25.53 | 0.247 | | 0.2 | 0.3 | 4.8 | | 0.05 |
| ARM B | 3.02 | 26.09 | 0.116 | | 0.1 | 0.1 | 1.9 | | 0.04 |
| ARM C | 4.75 | 25.48 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.31 | 25.53 | 0.247 | | 0.3 | 0.3 | 4.9 | | 0.05 |
| ARM B | 3.02 | 26.09 | 0.116 | | 0.1 | 0.1 | 2.0 | | 0.04 |
| ARM C | 4.75 | 25.48 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 5.15 | 25.88 | 0.199 | | 0.3 | 0.2 | 3.8 | | 0.05 |
| ARM B | 2.46 | 26.41 | 0.093 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM C | 3.88 | 25.57 | 0.152 | | 0.2 | 0.2 | 2.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 4.31 | 26.14 | 0.165 | | 0.2 | 0.2 | 3.0 | | 0.05 |
| ARM B | 2.06 | 26.64 | 0.077 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM C | 3.25 | 25.65 | 0.127 | | 0.2 | 0.1 | 2.2 | | 0.04 |



.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |

.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 473.1 | 315.4 | 23.1 | 0.05 | 23.1 | 0.05 |
| B | 226.2 | 150.8 | 9.5 | 0.04 | 9.5 | 0.04 |
| C | 356.5 | 237.7 | 16.5 | 0.05 | 16.5 | 0.05 |
| ALL | 1055.8 | 703.9 | 49.1 | 0.05 | 49.1 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
_______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 ---------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 ---------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2032 AM Peak - No Development.vai"
(drive-on-the-left ) at 15:14:59 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
  RUN TITLE: Huntstown Quarry
   LOCATION: Huntstown
       DATE: 01/12/16
     CLIENT: Roadstone
 ENUMERATOR: Roadplan
 JOB NUMBER: 16047-04
     STATUS: TIA
DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

V = approach half-width        L = effective flare length        D = inscribed circle diameter
E = entry width                R = entry radius                  PHI = entry angle

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

## Appendix D – ARCADY Results

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2032 AM Peak - No Development

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.20 | 6.30 | 4.20 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.85 | 2.78 | 1.85 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.38 | 5.06 | 3.38 |

DEMAND SET TITLE: 2032 AM Peak - No Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.551 | 0.449 |
| | | 0.0 | 185.0 | 151.0 |
| | | ( 0.0) | ( 7.0) | ( 16.0) |
| | ARM B | 0.351 | 0.000 | 0.649 |
| | | 52.0 | 0.0 | 96.0 |
| | | ( 15.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.252 | 0.748 | 0.000 |
| | | 68.0 | 202.0 | 0.0 |
| | | ( 2.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| ARM A | 4.20 | 26.17 | 0.160 | | 0.0 | 0.2 | 2.8 | | 0.05 |
| ARM B | 1.85 | 26.86 | 0.069 | | 0.0 | 0.1 | 1.1 | | 0.04 |
| ARM C | 3.38 | 25.63 | 0.132 | | 0.0 | 0.2 | 2.2 | | 0.04 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| ARM A | 5.02 | 25.90 | 0.194 | | 0.2 | 0.2 | 3.5 | | 0.05 |
| ARM B | 2.21 | 26.65 | 0.083 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM C | 4.03 | 25.55 | 0.158 | | 0.2 | 0.2 | 2.8 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 6.14 | 25.52 | 0.241 | | 0.2 | 0.3 | 4.7 | | 0.05 |
| ARM B | 2.71 | 26.37 | 0.103 | | 0.1 | 0.1 | 1.7 | | 0.04 |
| ARM C | 4.94 | 25.45 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.14 | 25.52 | 0.241 | | 0.3 | 0.3 | 4.7 | | 0.05 |
| ARM B | 2.71 | 26.36 | 0.103 | | 0.1 | 0.1 | 1.7 | | 0.04 |
| ARM C | 4.94 | 25.45 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 5.02 | 25.89 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.05 |
| ARM B | 2.21 | 26.65 | 0.083 | | 0.1 | 0.1 | 1.4 | | 0.04 |
| ARM C | 4.03 | 25.55 | 0.158 | | 0.2 | 0.2 | 2.9 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 4.20 | 26.17 | 0.161 | | 0.2 | 0.2 | 2.9 | | 0.05 |
| ARM B | 1.85 | 26.86 | 0.069 | | 0.1 | 0.1 | 1.1 | | 0.04 |
| ARM C | 3.38 | 25.63 | 0.132 | | 0.2 | 0.2 | 2.3 | | 0.04 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |

.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 460.7 | 307.2 | 22.3 | 0.05 | 22.3 | 0.05 |
| B | 202.9 | 135.3 | 8.3 | 0.04 | 8.3 | 0.04 |
| C | 370.2 | 246.8 | 17.3 | 0.05 | 17.3 | 0.05 |
| ALL | 1033.9 | 689.3 | 48.0 | 0.05 | 48.0 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

---------------------------------------------------------------------------------
THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION
---------------------------------------------------------------------------------

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2032 AM Peak - With Development.vai"
(drive-on-the-left ) at 15:14:38 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

RUN TITLE: Huntstown Quarry
LOCATION: Huntstown
DATE: 01/12/16
CLIENT: Roadstone
ENUMERATOR: Roadplan
JOB NUMBER: 16047-04
STATUS: TIA
DESCRIPTION:

.INPUT DATA
*********
ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

```
.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD  -  90   MINUTES.
 LENGTH OF TIME SEGMENT -  15   MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA


 DEMAND SET TITLE: 2032 AM Peak - With Development
 -----------------------------------------------------------------------------
 I       I   NUMBER OF MINUTES FROM START WHEN    I   RATE OF FLOW (VEH/MIN) I
 I  ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP  I AFTER I
 I       I   TO RISE   I  IS REACHED IFALLING   I  PEAK   I OF PEAK I PEAK   I
 -----------------------------------------------------------------------------
 I ARM A I     15.00   I     45.00   I    75.00   I  4.21  I   6.32  I  4.21 I
 I ARM B I     15.00   I     45.00   I    75.00   I  1.86  I   2.79  I  1.86 I
 I ARM C I     15.00   I     45.00   I    75.00   I  3.38  I   5.06  I  3.38 I
 -----------------------------------------------------------------------------


 DEMAND SET TITLE: 2032 AM Peak - With Development
.-----------------------------------------------------------
 I                    I         TURNING PROPORTIONS        I
 I                    I         TURNING COUNTS (VEH/HR)    I
 I                    I        (PERCENTAGE OF H.V.S)       I
 I                    -------------------------------------
 I        TIME        I FROM/TO I  ARM A I  ARM B I  ARM C I
 -----------------------------------------------------------
 I   07.15 - 08.45    I         I        I        I        I
 I                    I  ARM A  I  0.000 I  0.549 I  0.451 I
 I                    I         I    0.0 I  185.0 I  152.0 I
 I                    I         I (  0.0)I (  7.0)I ( 16.0)I
 I                    I         I        I        I        I
 I                    I  ARM B  I  0.349 I  0.000 I  0.651 I
 I                    I         I   52.0 I    0.0 I   97.0 I
 I                    I         I ( 15.0)I (  0.0)I ( 24.0)I
 I                    I         I        I        I        I
 I                    I  ARM C  I  0.252 I  0.748 I  0.000 I
 I                    I         I   68.0 I  202.0 I    0.0 I
 I                    I         I (  2.0)I ( 10.0)I (  0.0)I
 I                    I         I        I        I        I
 -----------------------------------------------------------

.         QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
          -------------------------------------------------------

.------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END       DELAY     GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                                (RFC)   (PEDS/MIN) (VEHS)  (VEHS)  TIME SEGMENT)  TIME SEGMENT)    VEHICLE (MIN) I
 I 07.15-07.30                                                                                                    I
 I ARM A       4.21     26.17    0.161                  0.0     0.2        2.8                             0.05      I
 I ARM B       1.86     26.85    0.069                  0.0     0.1        1.1                             0.04      I
 I ARM C       3.38     25.63    0.132                  0.0     0.2        2.2                             0.04      I
 I                                                                                                                  I
 ------------------------------------------------------------------------------------------------------------------
.------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END       DELAY     GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                                (RFC)   (PEDS/MIN) (VEHS)  (VEHS)  TIME SEGMENT)  TIME SEGMENT)    VEHICLE (MIN) I
 I 07.30-07.45                                                                                                    I
 I ARM A       5.03     25.89    0.194                  0.2     0.2        3.6                             0.05      I
 I ARM B       2.22     26.64    0.083                  0.1     0.1        1.3                             0.04      I
 I ARM C       4.03     25.55    0.158                  0.2     0.2        2.8                             0.05      I
 I                                                                                                                  I
 ------------------------------------------------------------------------------------------------------------------
.------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END       DELAY     GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                                (RFC)   (PEDS/MIN) (VEHS)  (VEHS)  TIME SEGMENT)  TIME SEGMENT)    VEHICLE (MIN) I
 I 07.45-08.00                                                                                                    I
 I ARM A       6.16     25.52    0.241                  0.2     0.3        4.7                             0.05      I
 I ARM B       2.72     26.35    0.103                  0.1     0.1        1.7                             0.04      I
 I ARM C       4.94     25.45    0.194                  0.2     0.2        3.6                             0.05      I
 I                                                                                                                  I
 ------------------------------------------------------------------------------------------------------------------
```

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.16 | 25.52 | 0.241 | | 0.3 | 0.3 | 4.8 | | 0.05 |
| ARM B | 2.72 | 26.35 | 0.103 | | 0.1 | 0.1 | 1.7 | | 0.04 |
| ARM C | 4.94 | 25.45 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 5.03 | 25.89 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.05 |
| ARM B | 2.22 | 26.64 | 0.083 | | 0.1 | 0.1 | 1.4 | | 0.04 |
| ARM C | 4.03 | 25.55 | 0.158 | | 0.2 | 0.2 | 2.9 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 4.21 | 26.16 | 0.161 | | 0.2 | 0.2 | 2.9 | | 0.05 |
| ARM B | 1.86 | 26.85 | 0.069 | | 0.1 | 0.1 | 1.1 | | 0.04 |
| ARM C | 3.38 | 25.63 | 0.132 | | 0.2 | 0.2 | 2.3 | | 0.04 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |

.                QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 462.1 | 308.1 | 22.4 | 0.05 | 22.4 | 0.05 |
| B | 204.3 | 136.2 | 8.4 | 0.04 | 8.4 | 0.04 |
| C | 370.2 | 246.8 | 17.3 | 0.05 | 17.3 | 0.05 |
| ALL | 1036.6 | 691.1 | 48.1 | 0.05 | 48.1 | 0.05 |

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

END OF JOB

```
                    _________________ A R C A D Y  6 _________________

                        ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


                        Analysis Program: Release 4.0 (FEBRUARY 2006)

                               (c) Copyright TRL Limited, 2004

                        Adapted from ARCADY/3 which is Crown Copyright
                           by permission of the controller of HMSO
                    ______________________________________________________

                          For sales and distribution information,
                          program advice and maintenance, contact:

                    TRL Limited             Tel:   +44 (0) 1344 770018
                    Crowthorne House        Fax:   +44 (0) 1344 770864
                    Nine Mile Ride          Email: softwarebureau@trl.co.uk
                    Wokingham, Berks.       Web:   www.trlsoftware.co.uk
                    RG40 3GA,UK
```

---

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

---

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\AM Peak\2032 AM Peak - With Development + Sensitivity Flows.vai"
(drive-on-the-left ) at 15:15:39 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 17/07/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-02
      STATUS: TIA
 DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

V = approach half-width          L = effective flare length          D = inscribed circle diameter
E = entry width                  R = entry radius                    PHI = entry angle

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2032 AM Peak - With Development + Sensitivity Flows

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.41 | 6.62 | 4.41 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.06 | 3.09 | 2.06 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.38 | 5.06 | 3.38 |

DEMAND SET TITLE: 2032 AM Peak - With Development + Sensitivity Flows

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.15 - 08.45 | | | | |
| | ARM A | 0.000 | 0.524 | 0.476 |
| | | 0.0 | 185.0 | 168.0 |
| | | ( 0.0) | ( 7.0) | ( 16.0) |
| | ARM B | 0.315 | 0.000 | 0.685 |
| | | 52.0 | 0.0 | 113.0 |
| | | ( 15.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.252 | 0.748 | 0.000 |
| | | 68.0 | 202.0 | 0.0 |
| | | ( 2.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.15-07.30 | | | | | | | | | |
| ARM A | 4.41 | 26.12 | 0.169 | | 0.0 | 0.2 | 3.0 | | 0.05 |
| ARM B | 2.06 | 26.67 | 0.077 | | 0.0 | 0.1 | 1.2 | | 0.04 |
| ARM C | 3.38 | 25.63 | 0.132 | | 0.0 | 0.2 | 2.2 | | 0.04 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.30-07.45 | | | | | | | | | |
| ARM A | 5.27 | 25.84 | 0.204 | | 0.2 | 0.3 | 3.8 | | 0.05 |
| ARM B | 2.46 | 26.43 | 0.093 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM C | 4.03 | 25.55 | 0.158 | | 0.2 | 0.2 | 2.8 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 6.45 | 25.47 | 0.253 | | 0.3 | 0.3 | 5.0 | | 0.05 |
| ARM B | 3.02 | 26.12 | 0.115 | | 0.1 | 0.1 | 1.9 | | 0.04 |
| ARM C | 4.94 | 25.45 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.45 | 25.47 | 0.253 | | 0.3 | 0.3 | 5.1 | | 0.05 |
| ARM B | 3.02 | 26.12 | 0.115 | | 0.1 | 0.1 | 2.0 | | 0.04 |
| ARM C | 4.94 | 25.45 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 5.27 | 25.84 | 0.204 | | 0.3 | 0.3 | 3.9 | | 0.05 |
| ARM B | 2.46 | 26.43 | 0.093 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM C | 4.03 | 25.55 | 0.158 | | 0.2 | 0.2 | 2.9 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 4.41 | 26.11 | 0.169 | | 0.3 | 0.2 | 3.1 | | 0.05 |
| ARM B | 2.06 | 26.67 | 0.077 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM C | 3.38 | 25.63 | 0.132 | | 0.2 | 0.2 | 2.3 | | 0.04 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.3 |
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.3 |
| 08.45 | 0.2 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.1 |
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 07.30 | 0.2 |
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |

.                QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 484.0 | 322.7 | 23.8 | 0.05 | 23.8 | 0.05 |
| B | 226.2 | 150.8 | 9.5 | 0.04 | 9.5 | 0.04 |
| C | 370.2 | 246.8 | 17.3 | 0.05 | 17.3 | 0.05 |
| ALL | 1080.5 | 720.3 | 50.6 | 0.05 | 50.6 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------

 Run with file:-
 "C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2016 PM Peak - Existing Flows.vai"
(drive-on-the-left ) at 15:20:14 on Thursday, 1 December 2016


.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width        L = effective flare length          D = inscribed circle diameter
 E = entry width                R = entry radius                    PHI = entry angle


.TRAFFIC DEMAND DATA
 -------------------

(Only sets included in the current run are shown)
```

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2016 PM Peak - Existing Flows

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.46 | 3.69 | 2.46 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.50 | 6.75 | 4.50 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.59 | 5.38 | 3.59 |

DEMAND SET TITLE: 2016 PM Peak - Existing Flows

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.563 | 0.437 |
| | | 0.0 | 111.0 | 86.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.514 | 0.000 | 0.486 |
| | | 185.0 | 0.0 | 175.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.443 | 0.557 | 0.000 |
| | | 127.0 | 160.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.46 | 27.54 | 0.089 | | 0.0 | 0.1 | 1.4 | | 0.04 |
| ARM B | 4.50 | 30.36 | 0.148 | | 0.0 | 0.2 | 2.6 | | 0.04 |
| ARM C | 3.59 | 24.37 | 0.147 | | 0.0 | 0.2 | 2.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 2.94 | 27.32 | 0.108 | | 0.1 | 0.1 | 1.8 | | 0.04 |
| ARM B | 5.37 | 30.24 | 0.178 | | 0.2 | 0.2 | 3.2 | | 0.04 |
| ARM C | 4.28 | 24.12 | 0.178 | | 0.2 | 0.2 | 3.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.60 | 27.00 | 0.133 | | 0.1 | 0.2 | 2.3 | | 0.04 |
| ARM B | 6.58 | 30.07 | 0.219 | | 0.2 | 0.3 | 4.1 | | 0.04 |
| ARM C | 5.25 | 23.78 | 0.221 | | 0.2 | 0.3 | 4.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.60 | 27.00 | 0.133 | | 0.2 | 0.2 | 2.3 | | 0.04 |
| ARM B | 6.58 | 30.07 | 0.219 | | 0.3 | 0.3 | 4.2 | | 0.04 |
| ARM C | 5.25 | 23.78 | 0.221 | | 0.3 | 0.3 | 4.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 2.94 | 27.31 | 0.108 | | 0.2 | 0.1 | 1.8 | | 0.04 |
| ARM B | 5.37 | 30.24 | 0.178 | | 0.3 | 0.2 | 3.3 | | 0.04 |
| ARM C | 4.28 | 24.12 | 0.178 | | 0.3 | 0.2 | 3.3 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.46 | 27.54 | 0.089 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM B | 4.50 | 30.36 | 0.148 | | 0.2 | 0.2 | 2.6 | | 0.04 |
| ARM C | 3.59 | 24.36 | 0.147 | | 0.2 | 0.2 | 2.6 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 270.1 | 180.1 | 11.1 | 0.04 | 11.1 | 0.04 |
| B | 493.6 | 329.1 | 20.0 | 0.04 | 20.0 | 0.04 |
| C | 393.5 | 262.4 | 20.1 | 0.05 | 20.1 | 0.05 |
| ALL | 1157.3 | 771.5 | 51.2 | 0.04 | 51.2 | 0.04 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited              Tel:   +44 (0) 1344 770018
Crowthorne House         Fax:   +44 (0) 1344 770864
Nine Mile Ride           Email: softwarebureau@trl.co.uk
Wokingham, Berks.        Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2017 PM Peak - No Development.vai"
(drive-on-the-left ) at 15:20:32 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
  RUN TITLE: Huntstown Quarry
   LOCATION: Huntstown
       DATE: 01/12/16
     CLIENT: Roadstone
 ENUMERATOR: Roadplan
 JOB NUMBER: 16047-04
     STATUS: TIA
DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width       L = effective flare length          D = inscribed circle diameter
E = entry width               R = entry radius                    PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2017 PM Peak - No Development

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.49 | 3.73 | 2.49 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.53 | 6.79 | 4.53 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.61 | 5.42 | 3.61 |

DEMAND SET TITLE: 2017 PM Peak - No Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.563 | 0.437 |
| | | 0.0 | 112.0 | 87.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.514 | 0.000 | 0.486 |
| | | 186.0 | 0.0 | 176.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.443 | 0.557 | 0.000 |
| | | 128.0 | 161.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.49 | 27.54 | 0.090 | | 0.0 | 0.1 | 1.5 | | 0.04 |
| ARM B | 4.53 | 30.35 | 0.149 | | 0.0 | 0.2 | 2.6 | | 0.04 |
| ARM C | 3.61 | 24.36 | 0.148 | | 0.0 | 0.2 | 2.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 2.97 | 27.31 | 0.109 | | 0.1 | 0.1 | 1.8 | | 0.04 |
| ARM B | 5.40 | 30.23 | 0.179 | | 0.2 | 0.2 | 3.2 | | 0.04 |
| ARM C | 4.31 | 24.11 | 0.179 | | 0.2 | 0.2 | 3.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.64 | 26.99 | 0.135 | | 0.1 | 0.2 | 2.3 | | 0.04 |
| ARM B | 6.62 | 30.06 | 0.220 | | 0.2 | 0.3 | 4.2 | | 0.04 |
| ARM C | 5.28 | 23.77 | 0.222 | | 0.2 | 0.3 | 4.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.64 | 26.99 | 0.135 | | 0.2 | 0.2 | 2.3 | | 0.04 |
| ARM B | 6.62 | 30.06 | 0.220 | | 0.3 | 0.3 | 4.2 | | 0.04 |
| ARM C | 5.28 | 23.77 | 0.222 | | 0.3 | 0.3 | 4.3 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 2.97 | 27.31 | 0.109 | | 0.2 | 0.1 | 1.9 | | 0.04 |
| ARM B | 5.40 | 30.23 | 0.179 | | 0.3 | 0.2 | 3.3 | | 0.04 |
| ARM C | 4.31 | 24.11 | 0.179 | | 0.3 | 0.2 | 3.3 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.49 | 27.53 | 0.090 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM B | 4.53 | 30.35 | 0.149 | | 0.2 | 0.2 | 2.7 | | 0.04 |
| ARM C | 3.61 | 24.36 | 0.148 | | 0.2 | 0.2 | 2.7 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.                QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 272.9 | 181.9 | 11.3 | 0.04 | 11.3 | 0.04 |
| B | 496.4 | 330.9 | 20.2 | 0.04 | 20.2 | 0.04 |
| C | 396.3 | 264.2 | 20.2 | 0.05 | 20.2 | 0.05 |
| ALL | 1165.5 | 777.0 | 51.7 | 0.04 | 51.7 | 0.04 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited            Tel:   +44 (0) 1344 770018
Crowthorne House       Fax:   +44 (0) 1344 770864
Nine Mile Ride         Email: softwarebureau@trl.co.uk
Wokingham, Berks.      Web:   www.trlsoftware.co.uk
RG40 3GA,UK

--------------------------------------------------------------------------------
 THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
 IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
--------------------------------------------------------------------------------

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2017 PM Peak - With Development.vai"
(drive-on-the-left ) at 15:20:55 on Thursday, 1 December 2016
```



```
.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width       L = effective flare length            D = inscribed circle diameter
 E = entry width               R = entry radius                      PHI = entry angle


.TRAFFIC DEMAND DATA
 ------------------

(Only sets included in the current run are shown)
```

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2017 PM Peak - With Development

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.50 | 3.75 | 2.50 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.54 | 6.81 | 4.54 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.61 | 5.42 | 3.61 |

DEMAND SET TITLE: 2017 PM Peak - With Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.560 | 0.440 |
| | | 0.0 | 112.0 | 88.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.512 | 0.000 | 0.488 |
| | | 186.0 | 0.0 | 177.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.443 | 0.557 | 0.000 |
| | | 128.0 | 161.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.50 | 27.54 | 0.091 | | 0.0 | 0.1 | 1.5 | | 0.04 |
| ARM B | 4.54 | 30.35 | 0.150 | | 0.0 | 0.2 | 2.6 | | 0.04 |
| ARM C | 3.61 | 24.36 | 0.148 | | 0.0 | 0.2 | 2.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 2.99 | 27.31 | 0.109 | | 0.1 | 0.1 | 1.8 | | 0.04 |
| ARM B | 5.42 | 30.22 | 0.179 | | 0.2 | 0.2 | 3.2 | | 0.04 |
| ARM C | 4.31 | 24.11 | 0.179 | | 0.2 | 0.2 | 3.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.66 | 27.00 | 0.135 | | 0.1 | 0.2 | 2.3 | | 0.04 |
| ARM B | 6.64 | 30.05 | 0.221 | | 0.2 | 0.3 | 4.2 | | 0.04 |
| ARM C | 5.28 | 23.77 | 0.222 | | 0.2 | 0.3 | 4.2 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.66 | 26.99 | 0.135 | | 0.2 | 0.2 | 2.3 | | 0.04 |
| ARM B | 6.64 | 30.05 | 0.221 | | 0.3 | 0.3 | 4.2 | | 0.04 |
| ARM C | 5.28 | 23.77 | 0.222 | | 0.3 | 0.3 | 4.3 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 2.99 | 27.31 | 0.109 | | 0.2 | 0.1 | 1.9 | | 0.04 |
| ARM B | 5.42 | 30.22 | 0.179 | | 0.3 | 0.2 | 3.3 | | 0.04 |
| ARM C | 4.31 | 24.11 | 0.179 | | 0.3 | 0.2 | 3.3 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.50 | 27.53 | 0.091 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM B | 4.54 | 30.35 | 0.150 | | 0.2 | 0.2 | 2.7 | | 0.04 |
| ARM C | 3.61 | 24.36 | 0.148 | | 0.2 | 0.2 | 2.7 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 274.2 | 182.8 | 11.3 | 0.04 | 11.3 | 0.04 |
| B | 497.7 | 331.8 | 20.2 | 0.04 | 20.2 | 0.04 |
| C | 396.3 | 264.2 | 20.2 | 0.05 | 20.2 | 0.05 |
| ALL | 1168.3 | 778.8 | 51.8 | 0.04 | 51.8 | 0.04 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
---------------------------------------------------------------------------------
 THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
 IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
---------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2022 PM Peak - No Development.vai"
(drive-on-the-left ) at 15:21:55 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width       L = effective flare length          D = inscribed circle diameter
E = entry width               R = entry radius                    PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

```
.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD  -  90   MINUTES.
 LENGTH OF TIME SEGMENT -  15   MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA


 DEMAND SET TITLE: 2022 PM Peak - No Development
 ---------------------------------------------------------------------------
 I       I   NUMBER OF MINUTES FROM START WHEN     I   RATE OF FLOW (VEH/MIN) I
 I  ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP  I AFTER I
 I       I   TO RISE   I  IS REACHED IFALLING    I  PEAK  I OF PEAK I PEAK  I
 ---------------------------------------------------------------------------
 I ARM A I     15.00   I     45.00   I    75.00   I  2.58  I   3.86  I  2.58 I
 I ARM B I     15.00   I     45.00   I    75.00   I  4.70  I   7.05  I  4.70 I
 I ARM C I     15.00   I     45.00   I    75.00   I  3.75  I   5.63  I  3.75 I
 ---------------------------------------------------------------------------


 DEMAND SET TITLE: 2022 PM Peak - No Development
.---------------------------------------------------------
 I                    I         TURNING PROPORTIONS       I
 I                    I         TURNING COUNTS (VEH/HR)   I
 I                    I        (PERCENTAGE OF H.V.S)      I
 I                    ------------------------------------
 I        TIME        I FROM/TO I  ARM A I  ARM B I  ARM C I
 ---------------------------------------------------------
 I   16.30 - 18.00    I         I        I        I        I
 I                    I  ARM A  I  0.000 I  0.563 I  0.437 I
 I                    I         I    0.0 I  116.0 I   90.0 I
 I                    I         I (  0.0)I (  8.0)I (  5.0)I
 I                    I         I        I        I        I
 I                    I  ARM B  I  0.513 I  0.000 I  0.487 I
 I                    I         I  193.0 I    0.0 I  183.0 I
 I                    I         I (  9.0)I (  0.0)I (  9.0)I
 I                    I         I        I        I        I
 I                    I  ARM C  I  0.443 I  0.557 I  0.000 I
 I                    I         I  133.0 I  167.0 I    0.0 I
 I                    I         I (  9.0)I ( 10.0)I (  0.0)I
 I                    I         I        I        I        I
 ---------------------------------------------------------

.         QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
          -------------------------------------------------------

.--------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                                (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 16.30-16.45                                                                                                      I
 I ARM A       2.58     27.49   0.094                   0.0    0.1        1.5                              0.04     I
 I ARM B       4.70     30.33   0.155                   0.0    0.2        2.7                              0.04     I
 I ARM C       3.75     24.31   0.154                   0.0    0.2        2.7                              0.05     I
 I                                                                                                                  I
 --------------------------------------------------------------------------------------------------------------------
.--------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                                (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 16.45-17.00                                                                                                      I
 I ARM A       3.07     27.26   0.113                   0.1    0.1        1.9                              0.04     I
 I ARM B       5.61     30.21   0.186                   0.2    0.2        3.4                              0.04     I
 I ARM C       4.48     24.05   0.186                   0.2    0.2        3.4                              0.05     I
 I                                                                                                                  I
 --------------------------------------------------------------------------------------------------------------------
.--------------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END      DELAY      GEOMETRIC DELAY    AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW      QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/       PER ARRIVING  I
 I                                (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
 I 17.00-17.15                                                                                                      I
 I ARM A       3.77     26.93   0.140                   0.1    0.2        2.4                              0.04     I
 I ARM B       6.87     30.03   0.229                   0.2    0.3        4.4                              0.04     I
 I ARM C       5.48     23.70   0.231                   0.2    0.3        4.4                              0.05     I
 I                                                                                                                  I
 --------------------------------------------------------------------------------------------------------------------
```

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.77 | 26.93 | 0.140 | | 0.2 | 0.2 | 2.4 | | 0.04 |
| ARM B | 6.87 | 30.03 | 0.229 | | 0.3 | 0.3 | 4.4 | | 0.04 |
| ARM C | 5.48 | 23.70 | 0.231 | | 0.3 | 0.3 | 4.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.07 | 27.25 | 0.113 | | 0.2 | 0.1 | 1.9 | | 0.04 |
| ARM B | 5.61 | 30.20 | 0.186 | | 0.3 | 0.2 | 3.5 | | 0.04 |
| ARM C | 4.48 | 24.05 | 0.186 | | 0.3 | 0.2 | 3.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.58 | 27.49 | 0.094 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM B | 4.70 | 30.33 | 0.155 | | 0.2 | 0.2 | 2.8 | | 0.04 |
| ARM C | 3.75 | 24.31 | 0.154 | | 0.2 | 0.2 | 2.8 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * * DELAY * | | * INCLUSIVE QUEUEING * * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 282.5 | 188.3 | 11.7 | 0.04 | 11.7 | 0.04 |
| B | 515.6 | 343.7 | 21.2 | 0.04 | 21.2 | 0.04 |
| C | 411.4 | 274.2 | 21.3 | 0.05 | 21.3 | 0.05 |
| ALL | 1209.4 | 806.3 | 54.2 | 0.04 | 54.2 | 0.04 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

     ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


     Analysis Program: Release 4.0 (FEBRUARY 2006)

            (c) Copyright TRL Limited, 2004

     Adapted from ARCADY/3 which is Crown Copyright
        by permission of the controller of HMSO
______________________________________________________

       For sales and distribution information,
       program advice and maintenance, contact:

  TRL Limited            Tel:   +44 (0) 1344 770018
  Crowthorne House       Fax:   +44 (0) 1344 770864
  Nine Mile Ride         Email: softwarebureau@trl.co.uk
  Wokingham, Berks.      Web:   www.trlsoftware.co.uk
  RG40 3GA,UK

 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------

 Run with file:-
 "C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2022 PM Peak - With Development.vai"
(drive-on-the-left ) at 15:22:48 on Thursday, 1 December 2016


.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width       L = effective flare length          D = inscribed circle diameter
 E = entry width               R = entry radius                    PHI = entry angle


.TRAFFIC DEMAND DATA
 -------------------

(Only sets included in the current run are shown)
```

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2022 PM Peak - With Development

| ARM | NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN): BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.59 | 3.88 | 2.59 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.71 | 7.07 | 4.71 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.75 | 5.63 | 3.75 |

DEMAND SET TITLE: 2022 PM Peak - With Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.560 | 0.440 |
| | | 0.0 | 116.0 | 91.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.512 | 0.000 | 0.488 |
| | | 193.0 | 0.0 | 184.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.443 | 0.557 | 0.000 |
| | | 133.0 | 167.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.59 | 27.50 | 0.094 | | 0.0 | 0.1 | 1.5 | | 0.04 |
| ARM B | 4.71 | 30.33 | 0.155 | | 0.0 | 0.2 | 2.7 | | 0.04 |
| ARM C | 3.75 | 24.31 | 0.154 | | 0.0 | 0.2 | 2.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.09 | 27.26 | 0.113 | | 0.1 | 0.1 | 1.9 | | 0.04 |
| ARM B | 5.63 | 30.20 | 0.186 | | 0.2 | 0.2 | 3.4 | | 0.04 |
| ARM C | 4.48 | 24.05 | 0.186 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.78 | 26.93 | 0.141 | | 0.1 | 0.2 | 2.4 | | 0.04 |
| ARM B | 6.89 | 30.02 | 0.230 | | 0.2 | 0.3 | 4.4 | | 0.04 |
| ARM C | 5.48 | 23.70 | 0.231 | | 0.2 | 0.3 | 4.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.78 | 26.94 | 0.140 | | 0.2 | 0.2 | 2.4 | | 0.04 |
| ARM B | 6.89 | 30.02 | 0.230 | | 0.3 | 0.3 | 4.5 | | 0.04 |
| ARM C | 5.48 | 23.70 | 0.231 | | 0.3 | 0.3 | 4.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.09 | 27.25 | 0.113 | | 0.2 | 0.1 | 1.9 | | 0.04 |
| ARM B | 5.63 | 30.20 | 0.186 | | 0.3 | 0.2 | 3.5 | | 0.04 |
| ARM C | 4.48 | 24.05 | 0.186 | | 0.3 | 0.2 | 3.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.59 | 27.49 | 0.094 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM B | 4.71 | 30.32 | 0.155 | | 0.2 | 0.2 | 2.8 | | 0.04 |
| ARM C | 3.75 | 24.31 | 0.154 | | 0.2 | 0.2 | 2.8 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 283.8 | 189.2 | 11.8 | 0.04 | 11.8 | 0.04 |
| B | 516.9 | 344.6 | 21.2 | 0.04 | 21.2 | 0.04 |
| C | 411.4 | 274.2 | 21.3 | 0.05 | 21.3 | 0.05 |
| ALL | 1212.2 | 808.1 | 54.3 | 0.04 | 54.3 | 0.04 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK

---------------------------------------------------------------------------------
 THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
 IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
---------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2022 PM Peak - With Development + Sensitivity Flows.vai"
(drive-on-the-left ) at 15:31:53 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
  RUN TITLE: Huntstown Quarry
   LOCATION: Huntstown
       DATE: 17/07/16
     CLIENT: Roadstone
 ENUMERATOR: Roadplan
 JOB NUMBER: 16047-02
     STATUS: TIA
DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width      L = effective flare length         D = inscribed circle diameter
E = entry width              R = entry radius                   PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2022 PM Peak - With Development + Sensitivity Flows

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.86 | 4.29 | 2.86 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.99 | 7.48 | 4.99 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.75 | 5.63 | 3.75 |

DEMAND SET TITLE: 2022 PM Peak - With Development + Sensitivity Flows

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.507 | 0.493 |
| | | 0.0 | 116.0 | 113.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.484 | 0.000 | 0.516 |
| | | 193.0 | 0.0 | 206.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.443 | 0.557 | 0.000 |
| | | 133.0 | 167.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.86 | 27.54 | 0.104 | | 0.0 | 0.1 | 1.7 | | 0.04 |
| ARM B | 4.99 | 30.17 | 0.165 | | 0.0 | 0.2 | 2.9 | | 0.04 |
| ARM C | 3.75 | 24.31 | 0.154 | | 0.0 | 0.2 | 2.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.42 | 27.30 | 0.125 | | 0.1 | 0.1 | 2.1 | | 0.04 |
| ARM B | 5.96 | 30.01 | 0.198 | | 0.2 | 0.2 | 3.7 | | 0.04 |
| ARM C | 4.48 | 24.05 | 0.186 | | 0.2 | 0.2 | 3.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 4.19 | 26.98 | 0.155 | | 0.1 | 0.2 | 2.7 | | 0.04 |
| ARM B | 7.29 | 29.79 | 0.245 | | 0.2 | 0.3 | 4.8 | | 0.04 |
| ARM C | 5.48 | 23.70 | 0.231 | | 0.2 | 0.3 | 4.4 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 4.19 | 26.98 | 0.155 | | 0.2 | 0.2 | 2.7 | | 0.04 |
| ARM B | 7.29 | 29.79 | 0.245 | | 0.3 | 0.3 | 4.8 | | 0.04 |
| ARM C | 5.48 | 23.70 | 0.231 | | 0.3 | 0.3 | 4.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.42 | 27.30 | 0.125 | | 0.2 | 0.1 | 2.2 | | 0.04 |
| ARM B | 5.96 | 30.01 | 0.198 | | 0.3 | 0.2 | 3.8 | | 0.04 |
| ARM C | 4.48 | 24.05 | 0.186 | | 0.3 | 0.2 | 3.5 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.86 | 27.53 | 0.104 | | 0.1 | 0.1 | 1.8 | | 0.04 |
| ARM B | 4.99 | 30.17 | 0.165 | | 0.2 | 0.2 | 3.0 | | 0.04 |
| ARM C | 3.75 | 24.31 | 0.154 | | 0.2 | 0.2 | 2.8 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 314.0 | 209.3 | 13.2 | 0.04 | 13.2 | 0.04 |
| B | 547.1 | 364.7 | 23.0 | 0.04 | 23.0 | 0.04 |
| C | 411.4 | 274.2 | 21.3 | 0.05 | 21.3 | 0.05 |
| ALL | 1272.5 | 848.3 | 57.5 | 0.05 | 57.5 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited             Tel:   +44 (0) 1344 770018
Crowthorne House        Fax:   +44 (0) 1344 770864
Nine Mile Ride          Email: softwarebureau@trl.co.uk
Wokingham, Berks.       Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------
```

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2032 PM Peak - No Development.vai"
(drive-on-the-left ) at 15:33:09 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

```
   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 01/12/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-04
      STATUS: TIA
 DESCRIPTION:
```

.INPUT DATA
*********

ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
V = approach half-width       L = effective flare length        D = inscribed circle diameter
E = entry width               R = entry radius                  PHI = entry angle
```

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2032 PM Peak - No Development

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.67 | 4.01 | 2.67 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.90 | 7.35 | 4.90 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.90 | 5.85 | 3.90 |

DEMAND SET TITLE: 2032 PM Peak - No Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.565 | 0.435 |
| | | 0.0 | 121.0 | 93.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.513 | 0.000 | 0.487 |
| | | 201.0 | 0.0 | 191.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.442 | 0.558 | 0.000 |
| | | 138.0 | 174.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.67 | 27.44 | 0.097 | | 0.0 | 0.1 | 1.6 | | 0.04 |
| ARM B | 4.90 | 30.31 | 0.162 | | 0.0 | 0.2 | 2.8 | | 0.04 |
| ARM C | 3.90 | 24.26 | 0.161 | | 0.0 | 0.2 | 2.8 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.19 | 27.19 | 0.117 | | 0.1 | 0.1 | 2.0 | | 0.04 |
| ARM B | 5.85 | 30.18 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.04 |
| ARM C | 4.66 | 23.99 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.91 | 26.86 | 0.146 | | 0.1 | 0.2 | 2.5 | | 0.04 |
| ARM B | 7.17 | 30.00 | 0.239 | | 0.2 | 0.3 | 4.6 | | 0.04 |
| ARM C | 5.70 | 23.62 | 0.241 | | 0.2 | 0.3 | 4.7 | | 0.06 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.91 | 26.86 | 0.146 | | 0.2 | 0.2 | 2.6 | | 0.04 |
| ARM B | 7.17 | 30.00 | 0.239 | | 0.3 | 0.3 | 4.7 | | 0.04 |
| ARM C | 5.70 | 23.62 | 0.241 | | 0.3 | 0.3 | 4.8 | | 0.06 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.19 | 27.19 | 0.117 | | 0.2 | 0.1 | 2.0 | | 0.04 |
| ARM B | 5.85 | 30.18 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.04 |
| ARM C | 4.66 | 23.98 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.67 | 27.44 | 0.097 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM B | 4.90 | 30.31 | 0.162 | | 0.2 | 0.2 | 2.9 | | 0.04 |
| ARM C | 3.90 | 24.25 | 0.161 | | 0.2 | 0.2 | 2.9 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 293.4 | 195.6 | 12.3 | 0.04 | 12.3 | 0.04 |
| B | 537.5 | 358.3 | 22.3 | 0.04 | 22.3 | 0.04 |
| C | 427.8 | 285.2 | 22.4 | 0.05 | 22.4 | 0.05 |
| ALL | 1258.8 | 839.2 | 57.0 | 0.05 | 57.0 | 0.05 |

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

END OF JOB

__________________ A R C A D Y 6 __________________

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
program advice and maintenance, contact:

TRL Limited            Tel:   +44 (0) 1344 770018
Crowthorne House       Fax:   +44 (0) 1344 770864
Nine Mile Ride         Email: softwarebureau@trl.co.uk
Wokingham, Berks.      Web:   www.trlsoftware.co.uk
RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2032 PM Peak - With Development.vai"
(drive-on-the-left ) at 15:34:09 on Thursday, 1 December 2016



.FILE PROPERTIES
***************

RUN TITLE: Huntstown Quarry
LOCATION: Huntstown
DATE: 01/12/16
CLIENT: Roadstone
ENUMERATOR: Roadplan
JOB NUMBER: 16047-04
STATUS: TIA
DESCRIPTION:

.INPUT DATA
*********
ARM A - R135 North
ARM B - R135 South
ARM C - N2 Slip Road

.GEOMETRIC DATA
--------------

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

V = approach half-width    L = effective flare length    D = inscribed circle diameter
E = entry width            R = entry radius              PHI = entry angle

.TRAFFIC DEMAND DATA
-------------------

(Only sets included in the current run are shown)

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

.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2032 PM Peak - With Development

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.69 | 4.03 | 2.69 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.90 | 7.35 | 4.90 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.90 | 5.85 | 3.90 |

DEMAND SET TITLE: 2032 PM Peak - With Development

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

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.30 - 18.00 | | | | |
| | ARM A | 0.000 | 0.563 | 0.437 |
| | | 0.0 | 121.0 | 94.0 |
| | | ( 0.0) | ( 8.0) | ( 5.0) |
| | ARM B | 0.513 | 0.000 | 0.487 |
| | | 201.0 | 0.0 | 191.0 |
| | | ( 9.0) | ( 0.0) | ( 9.0) |
| | ARM C | 0.442 | 0.558 | 0.000 |
| | | 138.0 | 174.0 | 0.0 |
| | | ( 9.0) | ( 10.0) | ( 0.0) |



. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.30-16.45 | | | | | | | | | |
| ARM A | 2.69 | 27.44 | 0.098 | | 0.0 | 0.1 | 1.6 | | 0.04 |
| ARM B | 4.90 | 30.30 | 0.162 | | 0.0 | 0.2 | 2.8 | | 0.04 |
| ARM C | 3.90 | 24.26 | 0.161 | | 0.0 | 0.2 | 2.8 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.21 | 27.19 | 0.118 | | 0.1 | 0.1 | 2.0 | | 0.04 |
| ARM B | 5.85 | 30.17 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.04 |
| ARM C | 4.66 | 23.99 | 0.194 | | 0.2 | 0.2 | 3.6 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.93 | 26.86 | 0.146 | | 0.1 | 0.2 | 2.5 | | 0.04 |
| ARM B | 7.17 | 29.99 | 0.239 | | 0.2 | 0.3 | 4.6 | | 0.04 |
| ARM C | 5.70 | 23.62 | 0.241 | | 0.2 | 0.3 | 4.7 | | 0.06 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.93 | 26.86 | 0.146 | | 0.2 | 0.2 | 2.6 | | 0.04 |
| ARM B | 7.17 | 29.99 | 0.239 | | 0.3 | 0.3 | 4.7 | | 0.04 |
| ARM C | 5.70 | 23.62 | 0.241 | | 0.3 | 0.3 | 4.8 | | 0.06 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.21 | 27.19 | 0.118 | | 0.2 | 0.1 | 2.0 | | 0.04 |
| ARM B | 5.85 | 30.17 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.04 |
| ARM C | 4.66 | 23.98 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.69 | 27.44 | 0.098 | | 0.1 | 0.1 | 1.7 | | 0.04 |
| ARM B | 4.90 | 30.30 | 0.162 | | 0.2 | 0.2 | 2.9 | | 0.04 |
| ARM C | 3.90 | 24.25 | 0.161 | | 0.2 | 0.2 | 2.9 | | 0.05 |

.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |



.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 294.8 | 196.5 | 12.4 | 0.04 | 12.4 | 0.04 |
| B | 537.5 | 358.3 | 22.3 | 0.04 | 22.3 | 0.04 |
| C | 427.8 | 285.2 | 22.4 | 0.05 | 22.4 | 0.05 |
| ALL | 1260.1 | 840.1 | 57.1 | 0.05 | 57.1 | 0.05 |

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

END OF JOB

```
___________________ A R C A D Y  6 ___________________

    ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


    Analysis Program: Release 4.0 (FEBRUARY 2006)

           (c) Copyright TRL Limited, 2004

    Adapted from ARCADY/3 which is Crown Copyright
       by permission of the controller of HMSO
______________________________________________________

      For sales and distribution information,
      program advice and maintenance, contact:

TRL Limited              Tel:   +44 (0) 1344 770018
Crowthorne House         Fax:   +44 (0) 1344 770864
Nine Mile Ride           Email: softwarebureau@trl.co.uk
Wokingham, Berks.        Web:   www.trlsoftware.co.uk
RG40 3GA,UK
```

```
 --------------------------------------------------------------------------------
 THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
 IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 --------------------------------------------------------------------------------

 Run with file:-
 "C:\ARCADY\2016\16047-04\R135 - N2 Roundabout\PM Peak\2032 PM Peak - With Development + Sensitivity Flows.vai"
(drive-on-the-left ) at 15:35:10 on Thursday, 1 December 2016


.FILE PROPERTIES
 ***************

   RUN TITLE: Huntstown Quarry
    LOCATION: Huntstown
        DATE: 17/07/16
      CLIENT: Roadstone
  ENUMERATOR: Roadplan
  JOB NUMBER: 16047-02
      STATUS: TIA
 DESCRIPTION:

.INPUT DATA
 *********
 ARM A - R135 North
 ARM B - R135 South
 ARM C - N2 Slip Road

.GEOMETRIC DATA
 --------------
```

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 8.00 | 30.00 | 20.00 | 60.00 | 51.0 | 0.562 | 30.623 |
| ARM B | 3.50 | 9.50 | 30.00 | 20.00 | 60.00 | 49.0 | 0.596 | 33.767 |
| ARM C | 7.00 | 9.00 | 30.00 | 3.00 | 13.00 | 53.0 | 0.551 | 28.086 |

```
 V = approach half-width       L = effective flare length          D = inscribed circle diameter
 E = entry width               R = entry radius                    PHI = entry angle


.TRAFFIC DEMAND DATA
 -------------------

(Only sets included in the current run are shown)
```

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

```
.TIME PERIOD BEGINS 16.30 AND ENDS 18.00
.LENGTH OF TIME PERIOD  -  90   MINUTES.
 LENGTH OF TIME SEGMENT -  15   MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA


 DEMAND SET TITLE: 2032 PM Peak - With Development + Sensitivity Flows
 ---------------------------------------------------------------------
 I       I   NUMBER OF MINUTES FROM START WHEN    I   RATE OF FLOW (VEH/MIN) I
 I  ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP  I AFTER I
 I       I   TO RISE   I  IS REACHED IFALLING    I  PEAK  I OF PEAK I PEAK  I
 ---------------------------------------------------------------------
 I ARM A I     15.00   I     45.00   I    75.00   I  2.89  I   4.33  I  2.89 I
 I ARM B I     15.00   I     45.00   I    75.00   I  5.10  I   7.65  I  5.10 I
 I ARM C I     15.00   I     45.00   I    75.00   I  3.90  I   5.85  I  3.90 I
 ---------------------------------------------------------------------


 DEMAND SET TITLE: 2032 PM Peak - With Development + Sensitivity Flows
.-----------------------------------------------------
 I                    I         TURNING PROPORTIONS        I
 I                    I         TURNING COUNTS (VEH/HR)    I
 I                    I        (PERCENTAGE OF H.V.S)       I
 I                    -----------------------------------
 I        TIME        I FROM/TO I  ARM A I  ARM B I  ARM C I
 -----------------------------------------------------
 I   16.30 - 18.00    I         I        I        I        I
 I                    I  ARM A  I  0.000 I  0.524 I  0.476 I
 I                    I         I    0.0 I  121.0 I  110.0 I
 I                    I         I (  0.0)I (  8.0)I (  5.0)I
 I                    I         I        I        I        I
 I                    I  ARM B  I  0.493 I  0.000 I  0.507 I
 I                    I         I  201.0 I    0.0 I  207.0 I
 I                    I         I (  9.0)I (  0.0)I (  9.0)I
 I                    I         I        I        I        I
 I                    I  ARM C  I  0.442 I  0.558 I  0.000 I
 I                    I         I  138.0 I  174.0 I    0.0 I
 I                    I         I (  9.0)I ( 10.0)I (  0.0)I
 I                    I         I        I        I        I
 -----------------------------------------------------

.         QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
          -------------------------------------------------------

.------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/      PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 16.30-16.45                                                                                                  I
 I ARM A       2.89     27.47    0.105                  0.0    0.1       1.7                            0.04      I
 I ARM B       5.10     30.19    0.169                  0.0    0.2       3.0                            0.04      I
 I ARM C       3.90     24.26    0.161                  0.0    0.2       2.8                            0.05      I
 I                                                                                                              I
 ------------------------------------------------------------------------------------------------------------

.------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/      PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 16.45-17.00                                                                                                  I
 I ARM A       3.45     27.22    0.127                  0.1    0.1       2.1                            0.04      I
 I ARM B       6.09     30.03    0.203                  0.2    0.3       3.8                            0.04      I
 I ARM C       4.66     23.99    0.194                  0.2    0.2       3.6                            0.05      I
 I                                                                                                              I
 ------------------------------------------------------------------------------------------------------------

.------------------------------------------------------------------------------------------------------------
 I  TIME      DEMAND  CAPACITY  DEMAND/   PEDESTRIAN  START   END      DELAY     GEOMETRIC DELAY   AVERAGE DELAY I
 I          (VEH/MIN) (VEH/MIN) CAPACITY     FLOW     QUEUE  QUEUE    (VEH.MIN/      (VEH.MIN/      PER ARRIVING  I
 I                               (RFC)    (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)  TIME SEGMENT)   VEHICLE (MIN) I
 I 17.00-17.15                                                                                                  I
 I ARM A       4.22     26.89    0.157                  0.1    0.2       2.8                            0.04      I
 I ARM B       7.46     29.82    0.250                  0.3    0.3       4.9                            0.04      I
 I ARM C       5.70     23.62    0.241                  0.2    0.3       4.7                            0.06      I
 I                                                                                                              I
 ------------------------------------------------------------------------------------------------------------
```

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 4.22 | 26.89 | 0.157 | | 0.2 | 0.2 | 2.8 | | 0.04 |
| ARM B | 7.46 | 29.82 | 0.250 | | 0.3 | 0.3 | 5.0 | | 0.04 |
| ARM C | 5.70 | 23.62 | 0.241 | | 0.3 | 0.3 | 4.8 | | 0.06 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.45 | 27.22 | 0.127 | | 0.2 | 0.1 | 2.2 | | 0.04 |
| ARM B | 6.09 | 30.03 | 0.203 | | 0.3 | 0.3 | 3.9 | | 0.04 |
| ARM C | 4.66 | 23.98 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.05 |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/ CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 2.89 | 27.47 | 0.105 | | 0.1 | 0.1 | 1.8 | | 0.04 |
| ARM B | 5.10 | 30.19 | 0.169 | | 0.3 | 0.2 | 3.1 | | 0.04 |
| ARM C | 3.90 | 24.25 | 0.161 | | 0.2 | 0.2 | 2.9 | | 0.05 |



.QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

.QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.3 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |

.QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 16.45 | 0.2 |
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.2 |
| 18.00 | 0.2 |

.

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * * DELAY * (MIN) | * QUEUEING * * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * * DELAY * (MIN) | * INCLUSIVE QUEUEING * * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 316.7 | 211.2 | 13.4 | 0.04 | 13.4 | 0.04 |
| B | 559.5 | 373.0 | 23.6 | 0.04 | 23.6 | 0.04 |
| C | 427.8 | 285.2 | 22.4 | 0.05 | 22.4 | 0.05 |
| ALL | 1304.0 | 869.3 | 59.5 | 0.05 | 59.5 | 0.05 |

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

END OF JOB

# APPENDIX 13-E

# OSCADY PRO RESULTS

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:40:52

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

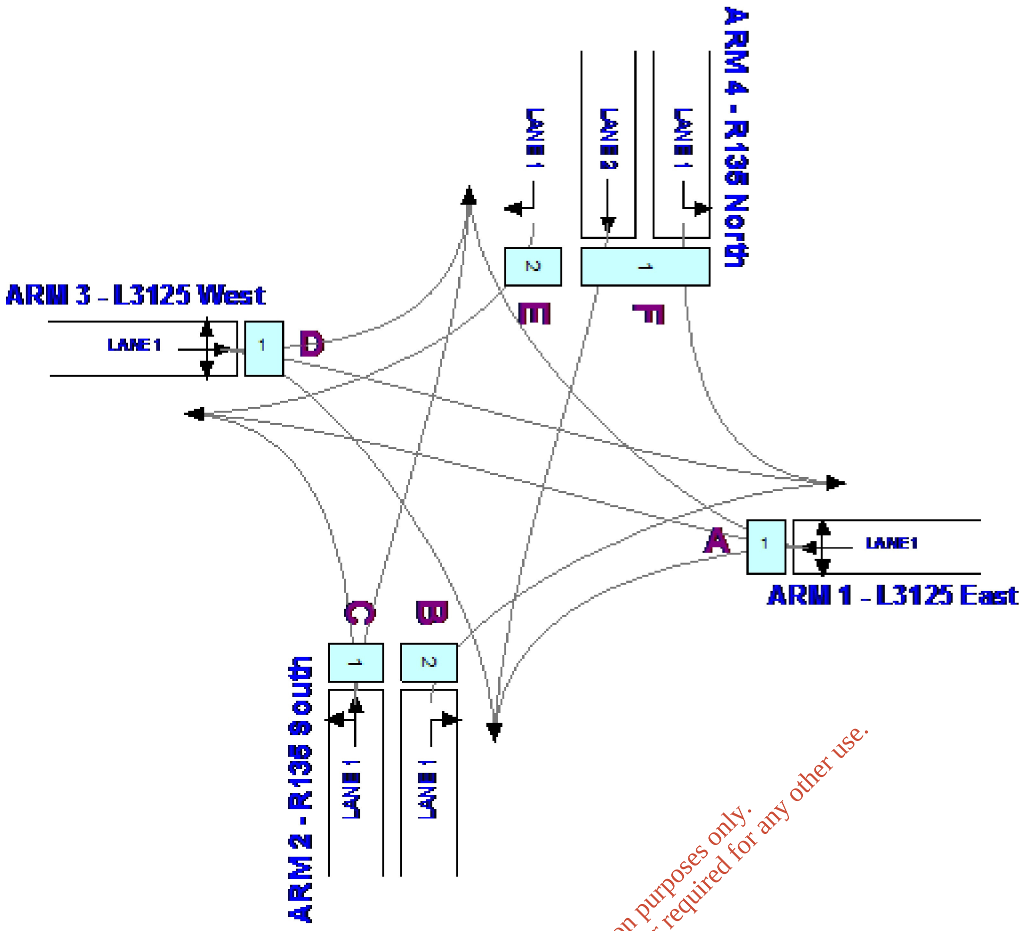
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram






# Signals

### Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

### Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

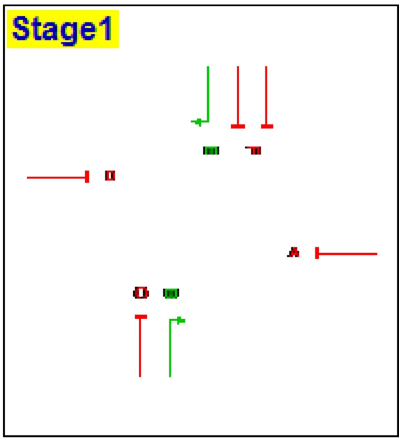
## Intergreen Matrix

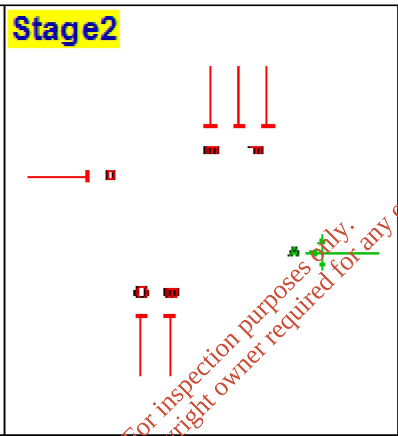
| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

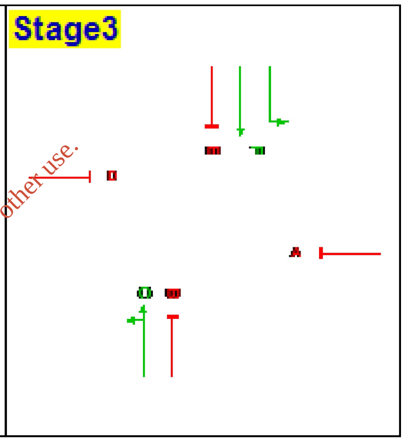
## Stages

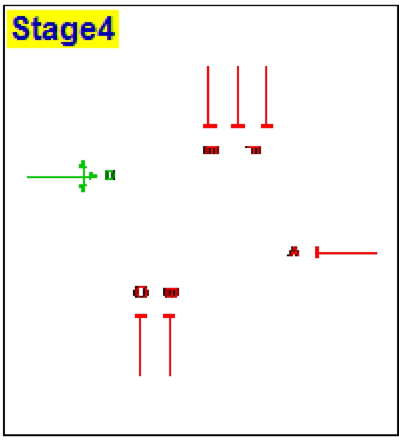
| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams









## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set1 - 2016 AM Peak Existing

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 101 | 331 | 93 |
| | **Arm 2** | 88 | - | 224 | 77 |
| | **Arm 3** | 163 | 111 | - | 11 |
| | **Arm 4** | 234 | 137 | 30 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 394 | 470 | 576 | 576 | 470 | 394 |
| 2 - R135 South | 1 | C | 228 | 272 | 333 | 333 | 272 | 228 |
| 2 - R135 South | 2 | B | 67 | 80 | 98 | 98 | 80 | 67 |
| 3 - L3125 West | 1 | D | 214 | 255 | 313 | 313 | 255 | 214 |
| 4 - R135 North | 1 | F | 277 | 330 | 405 | 405 | 330 | 277 |
| 4 - R135 North | 2 | E | 21 | 25 | 31 | 31 | 25 | 21 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 58 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 58 | 34 | 7 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 21.48 | 20.44 | 20.44 | 68.8 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | 1.30 | 21.71 | 21.71 | 66.40 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

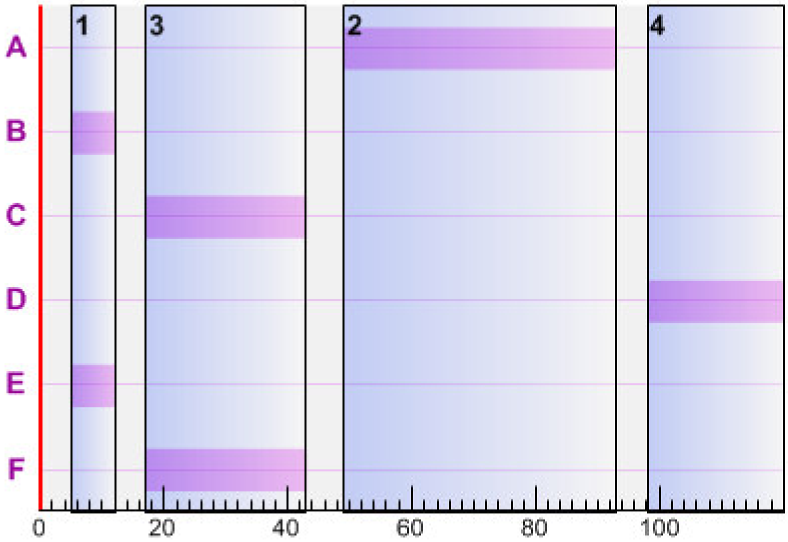
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 26.0 | 43.0 |
| 2 | 49.0 | 44.0 | 93.0 |
| 4 | 98.0 | 22.0 | 0.0 |

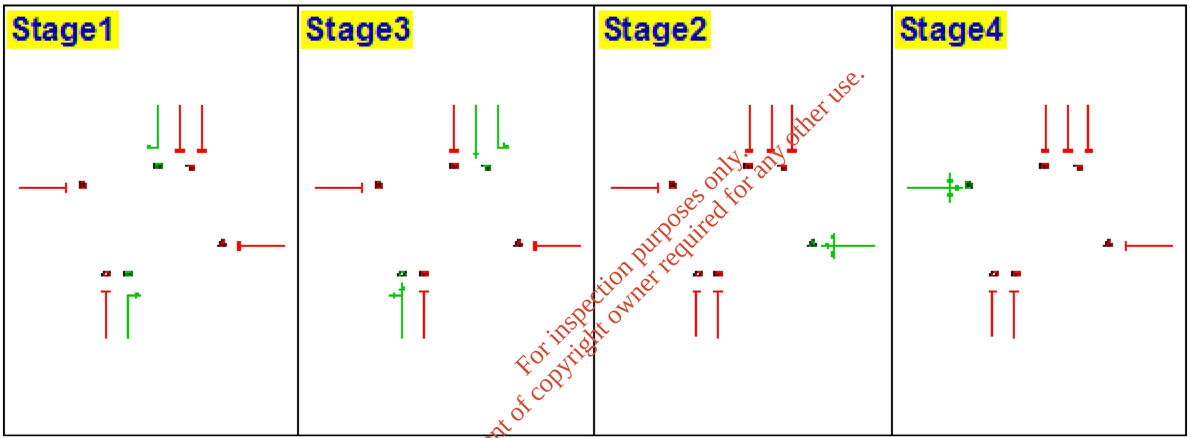
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 49 | 44.0 | 93 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 26.0 | 43 | | | | | | |
| **D** | 98 | 22.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 26.0 | 43 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 480 | A | 45.50 | 39.92 | 5.32 | 70.68 | 27.33 | 1.24 | 12.22 | 10.99 | 28.10 |
| **2** | **1** | 278 | C | 27.50 | 56.47 | 4.36 | 70.36 | 27.90 | 1.15 | 8.72 | 7.56 | 10.30 |
| **2** | **2** | 82 | B | 8.50 | 82.36 | 1.88 | 61.97 | 45.23 | 0.66 | 3.25 | 2.58 | 1.70 |
| **3** | **1** | 261 | D | 23.50 | 64.03 | 4.64 | 74.08 | 21.48 | 1.45 | 8.83 | 7.38 | 8.00 |
| **4** | **1** | 337 | F | 27.50 | 40.87 | 3.83 | 38.85 | 131.65 | 0.17 | 9.46 | 9.28 | 19.90 |
| **4** | **2** | 26 | E | 8.50 | 56.91 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.80 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 394 | 1 | 45.50 | 34.32 | 3.76 | 58.02 | 55.12 | 0.56 | 9.42 | 8.85 | 4.90 |
| **2** | **1** | 228 | 3 | 27.50 | 48.83 | 3.09 | 57.71 | 55.95 | 0.53 | 6.67 | 6.14 | 1.80 |
| **2** | **2** | 67 | 2 | 8.50 | 70.20 | 1.31 | 50.64 | 77.74 | 0.33 | 2.43 | 2.10 | 0.30 |
| **3** | **1** | 214 | 4 | 23.50 | 53.71 | 3.19 | 60.74 | 48.17 | 0.62 | 6.62 | 5.99 | 1.40 |
| **4** | **1** | 277 | 6 | 27.50 | 39.74 | 3.06 | 31.93 | 181.83 | 0.10 | 7.64 | 7.53 | 2.90 |
| **4** | **2** | 21 | 5 | 8.50 | 55.72 | 0.33 | 15.87 | 467.07 | 0.02 | 0.67 | 0.65 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 470 | 1 | 45.50 | 38.93 | 5.08 | 69.21 | 30.04 | 1.09 | 11.83 | 10.74 | 4.70 |
| **2** | **1** | 272 | 3 | 27.50 | 54.85 | 4.14 | 68.85 | 30.73 | 1.00 | 8.39 | 7.39 | 1.70 |
| **2** | **2** | 80 | 2 | 8.50 | 79.12 | 1.76 | 60.46 | 48.86 | 0.57 | 3.08 | 2.52 | 0.30 |
| **3** | **1** | 255 | 4 | 23.50 | 61.41 | 4.35 | 72.38 | 24.34 | 1.22 | 8.42 | 7.20 | 1.30 |
| **4** | **1** | 330 | 6 | 27.50 | 40.73 | 3.73 | 38.04 | 136.56 | 0.16 | 9.24 | 9.08 | 3.30 |
| **4** | **2** | 25 | 5 | 8.50 | 56.66 | 0.39 | 18.89 | 376.34 | 0.03 | 0.81 | 0.78 | 0.10 |

## Traffic Stream Details (07:45-08:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 576 | 1 | 45.50 | 50.51 | 8.08 | 84.82 | 6.11 | 3.09 | 16.56 | 13.47 | 3.70 |
| **2** | **1** | 333 | 3 | 27.50 | 69.41 | 6.42 | 84.29 | 6.78 | 2.62 | 11.79 | 9.17 | 1.50 |
| **2** | **2** | 98 | 2 | 8.50 | 95.38 | 2.60 | 74.06 | 21.52 | 1.16 | 4.26 | 3.10 | 0.30 |
| **3** | **1** | 313 | 4 | 23.50 | 81.61 | 7.10 | 88.84 | 1.30 | 3.50 | 12.45 | 8.95 | 1.10 |
| **4** | **1** | 405 | 6 | 27.50 | 42.30 | 4.76 | 46.69 | 92.75 | 0.29 | 11.61 | 11.32 | 3.60 |
| **4** | **2** | 31 | 5 | 8.50 | 58.11 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |



## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 576 | 1 | 45.50 | 52.66 | 8.43 | 84.82 | 6.11 | 3.21 | 16.69 | 13.47 | 3.70 |
| **2** | **1** | 333 | 3 | 27.50 | 73.75 | 6.82 | 84.29 | 6.78 | 2.79 | 11.96 | 9.17 | 1.50 |
| **2** | **2** | 98 | 2 | 8.50 | 101.46 | 2.76 | 74.06 | 21.52 | 1.24 | 4.33 | 3.10 | 0.30 |
| **3** | **1** | 313 | 4 | 23.50 | 90.90 | 7.90 | 88.84 | 1.30 | 3.89 | 12.84 | 8.95 | 1.10 |
| **4** | **1** | 405 | 6 | 27.50 | 42.32 | 4.76 | 46.69 | 92.75 | 0.29 | 11.62 | 11.32 | 3.60 |
| **4** | **2** | 31 | 5 | 8.50 | 58.15 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 470 | 1 | 45.50 | 40.09 | 5.23 | 69.21 | 30.04 | 1.17 | 11.91 | 10.74 | 4.70 |
| **2** | **1** | 272 | 3 | 27.50 | 57.78 | 4.37 | 68.85 | 30.73 | 1.12 | 8.51 | 7.39 | 1.70 |
| **2** | **2** | 80 | 2 | 8.50 | 85.73 | 1.91 | 60.46 | 48.86 | 0.68 | 3.20 | 2.52 | 0.30 |
| **3** | **1** | 255 | 4 | 23.50 | 67.99 | 4.82 | 72.38 | 24.34 | 1.43 | 8.63 | 7.20 | 1.30 |
| **4** | **1** | 330 | 6 | 27.50 | 40.75 | 3.74 | 38.04 | 136.56 | 0.17 | 9.24 | 9.08 | 3.30 |
| **4** | **2** | 25 | 5 | 8.50 | 56.72 | 0.39 | 18.89 | 376.34 | 0.03 | 0.81 | 0.78 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 394 | 1 | 45.50 | 34.63 | 3.79 | 58.02 | 55.12 | 0.58 | 9.44 | 8.85 | 4.90 |
| **2** | **1** | 228 | 3 | 27.50 | 49.71 | 3.15 | 57.71 | 55.95 | 0.56 | 6.70 | 6.14 | 1.80 |
| **2** | **2** | 67 | 2 | 8.50 | 73.79 | 1.37 | 50.64 | 77.74 | 0.37 | 2.47 | 2.10 | 0.30 |
| **3** | **1** | 214 | 4 | 23.50 | 55.28 | 3.29 | 60.74 | 48.17 | 0.67 | 6.67 | 5.99 | 1.40 |
| **4** | **1** | 277 | 6 | 27.50 | 39.76 | 3.06 | 31.93 | 181.83 | 0.11 | 7.64 | 7.53 | 2.90 |
| **4** | **2** | 21 | 5 | 8.50 | 55.81 | 0.33 | 15.87 | 467.07 | 0.02 | 0.67 | 0.65 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:42:10

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

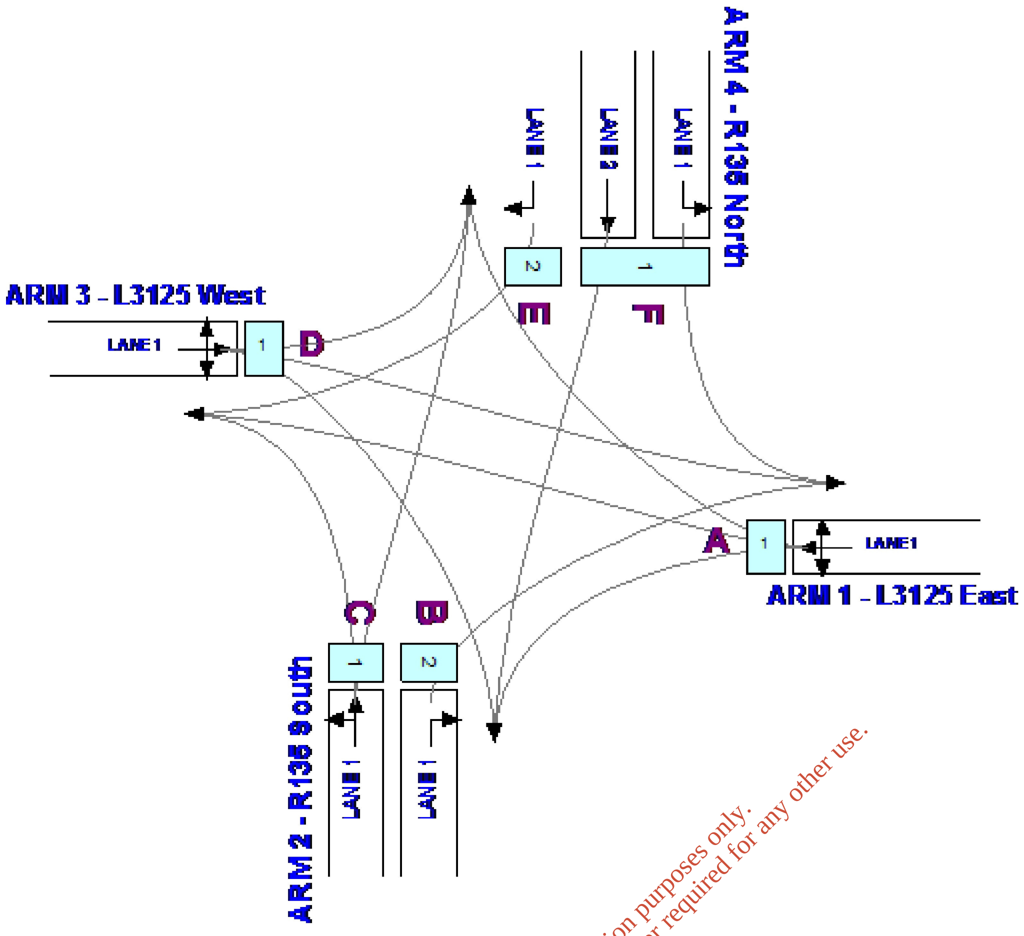
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

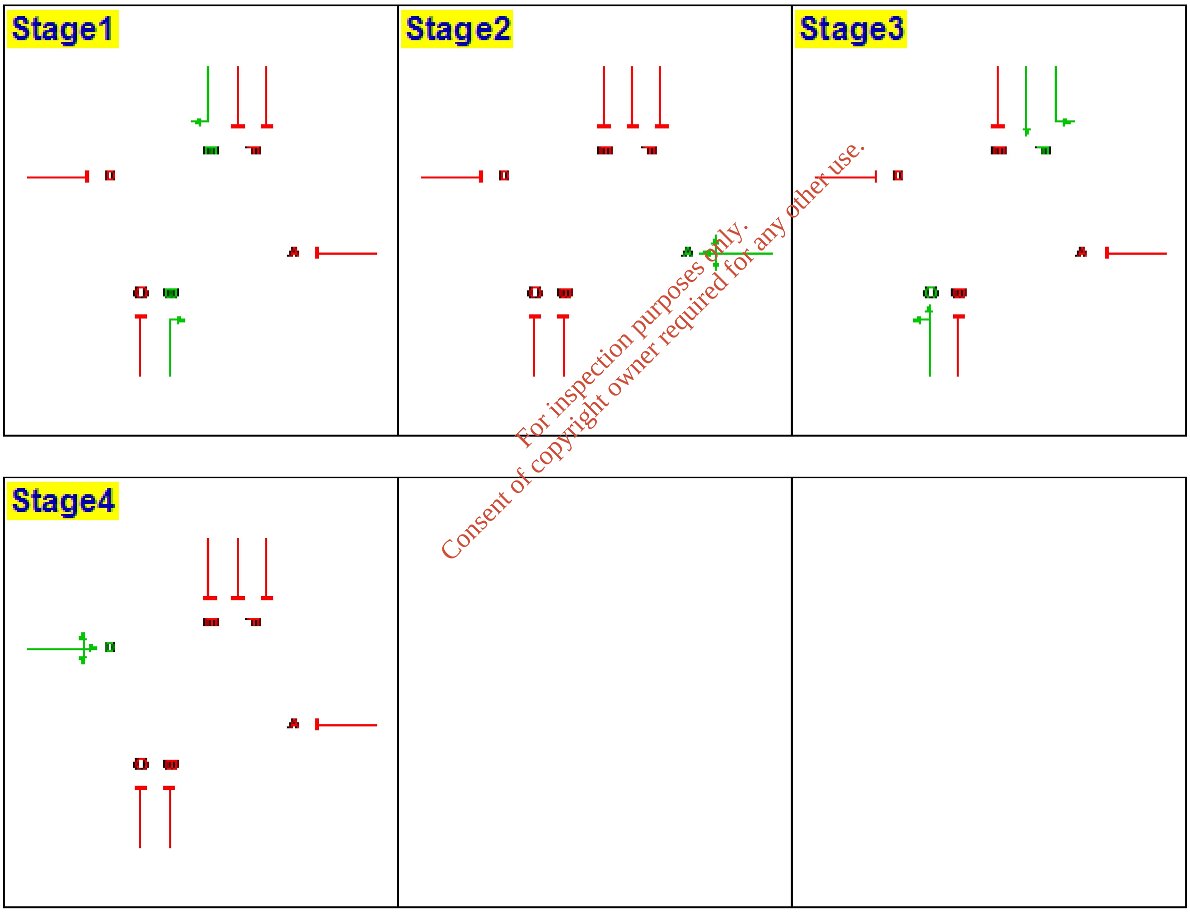
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set2 - 2017 AM Peak No Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 102 | 333 | 94 |
| | **Arm 2** | 89 | - | 226 | 78 |
| | **Arm 3** | 164 | 112 | - | 11 |
| | **Arm 4** | 236 | 138 | 30 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 397 | 474 | 580 | 580 | 474 | 397 |
| 2 - R135 South | 1 | C | 230 | 275 | 336 | 336 | 275 | 230 |
| 2 - R135 South | 2 | B | 68 | 81 | 99 | 99 | 81 | 68 |
| 3 - L3125 West | 1 | D | 215 | 257 | 315 | 315 | 257 | 215 |
| 4 - R135 North | 1 | F | 279 | 333 | 408 | 408 | 333 | 279 |
| 4 - R135 North | 2 | E | 21 | 25 | 31 | 31 | 25 | 21 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 58 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 58 | 34 | 7 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 21.02 | 20.71 | 20.71 | 68.8 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | 0.66 | 22.10 | 22.10 | 66.20 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

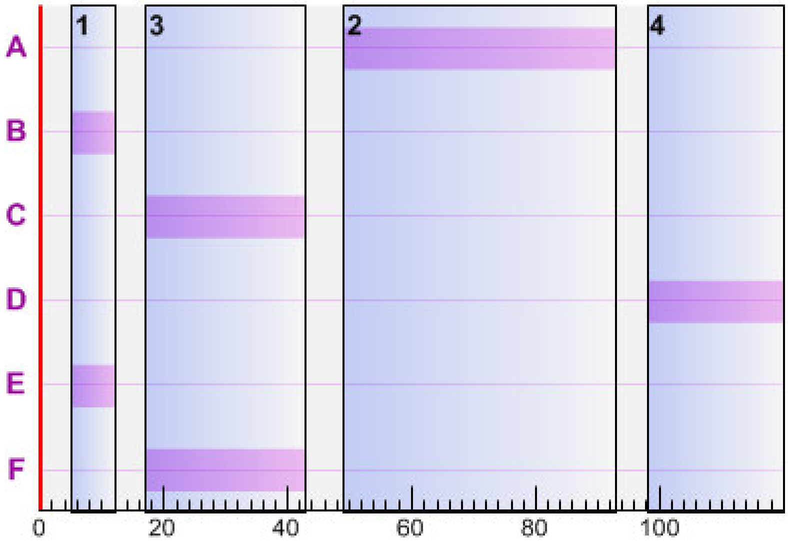
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 26.0 | 43.0 |
| 2 | 49.0 | 44.0 | 93.0 |
| 4 | 98.0 | 22.0 | 0.0 |



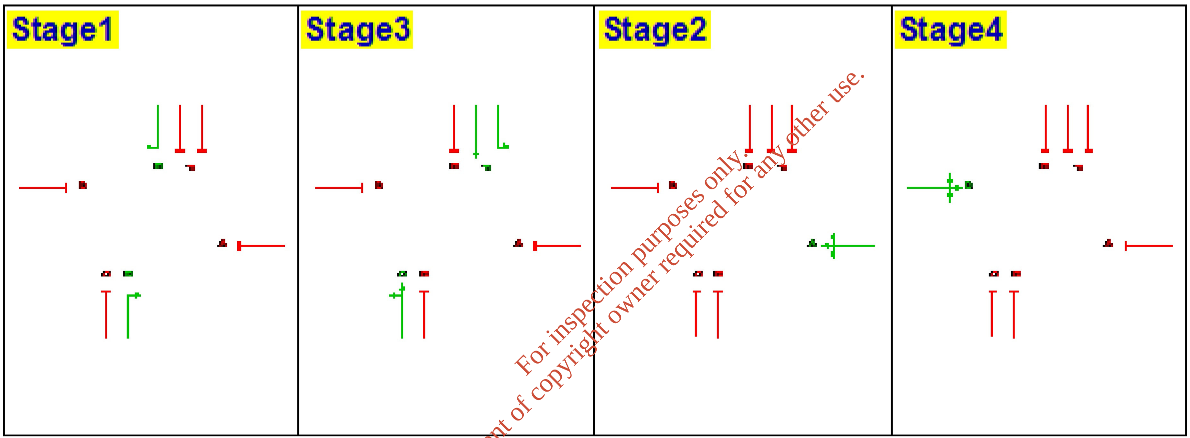
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 49 | 44.0 | 93 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 26.0 | 43 | | | | | | |
| **D** | 98 | 22.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 26.0 | 43 | | | | | | |

### Phase Timings Diagram




### Final Stage Sequence






### Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 484 | A | 45.50 | 40.25 | 5.41 | 71.27 | 26.28 | 1.28 | 12.37 | 11.09 | 28.00 |
| **2** | **1** | 280 | C | 27.50 | 56.86 | 4.42 | 70.87 | 26.99 | 1.19 | 8.81 | 7.62 | 10.30 |
| **2** | **2** | 83 | B | 8.50 | 83.26 | 1.92 | 62.73 | 43.48 | 0.69 | 3.31 | 2.61 | 1.70 |
| **3** | **1** | 262 | D | 23.50 | 64.32 | 4.68 | 74.37 | 21.02 | 1.48 | 8.89 | 7.41 | 8.00 |
| **4** | **1** | 340 | F | 27.50 | 40.93 | 3.87 | 39.20 | 129.60 | 0.18 | 9.55 | 9.37 | 20.00 |
| **4** | **2** | 26 | E | 8.50 | 56.91 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.80 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 397 | 1 | 45.50 | 34.46 | 3.80 | 58.46 | 53.95 | 0.58 | 9.50 | 8.92 | 4.90 |
| 2 | 1 | 230 | 3 | 27.50 | 49.03 | 3.13 | 58.22 | 54.60 | 0.54 | 6.74 | 6.19 | 1.80 |
| 2 | 2 | 68 | 2 | 8.50 | 70.67 | 1.33 | 51.39 | 75.12 | 0.34 | 2.48 | 2.14 | 0.30 |
| 3 | 1 | 215 | 4 | 23.50 | 53.84 | 3.22 | 61.03 | 47.48 | 0.63 | 6.66 | 6.02 | 1.40 |
| 4 | 1 | 279 | 6 | 27.50 | 39.78 | 3.08 | 32.17 | 179.81 | 0.11 | 7.70 | 7.59 | 2.90 |
| 4 | 2 | 21 | 5 | 8.50 | 55.72 | 0.33 | 15.87 | 467.07 | 0.02 | 0.67 | 0.65 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 474 | 1 | 45.50 | 39.22 | 5.16 | 69.80 | 28.94 | 1.13 | 11.97 | 10.84 | 4.70 |
| 2 | 1 | 275 | 3 | 27.50 | 55.33 | 4.23 | 69.61 | 29.30 | 1.05 | 8.53 | 7.48 | 1.70 |
| 2 | 2 | 81 | 2 | 8.50 | 79.92 | 1.80 | 61.22 | 47.02 | 0.59 | 3.14 | 2.55 | 0.30 |
| 3 | 1 | 257 | 4 | 23.50 | 61.86 | 4.42 | 72.95 | 23.37 | 1.26 | 8.52 | 7.26 | 1.30 |
| 4 | 1 | 333 | 6 | 27.50 | 40.79 | 3.77 | 38.39 | 134.43 | 0.17 | 9.34 | 9.17 | 3.30 |
| 4 | 2 | 25 | 5 | 8.50 | 56.66 | 0.39 | 18.89 | 376.34 | 0.03 | 0.81 | 0.78 | 0.10 |

## Traffic Stream Details (07:45-08:00)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 580 | 1 | 45.50 | 51.19 | 8.25 | 85.41 | 5.38 | 3.23 | 16.81 | 13.58 | 3.60 |
| 2 | 1 | 336 | 3 | 27.50 | 70.51 | 6.58 | 85.05 | 5.83 | 2.77 | 12.02 | 9.26 | 1.40 |
| 2 | 2 | 99 | 2 | 8.50 | 96.58 | 2.66 | 74.82 | 20.29 | 1.21 | 4.34 | 3.13 | 0.30 |
| 3 | 1 | 315 | 4 | 23.50 | 82.71 | 7.24 | 89.41 | 0.66 | 3.64 | 12.65 | 9.01 | 1.10 |
| 4 | 1 | 408 | 6 | 27.50 | 42.37 | 4.80 | 47.04 | 91.34 | 0.30 | 11.71 | 11.41 | 3.70 |
| 4 | 2 | 31 | 5 | 8.50 | 58.11 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 580 | 1 | 45.50 | 53.57 | 8.63 | 85.41 | 5.38 | 3.37 | 16.95 | 13.58 | 3.60 |
| 2 | 1 | 336 | 3 | 27.50 | 75.27 | 7.03 | 85.05 | 5.83 | 2.95 | 12.21 | 9.26 | 1.40 |
| 2 | 2 | 99 | 2 | 8.50 | 103.04 | 2.83 | 74.82 | 20.29 | 1.29 | 4.42 | 3.13 | 0.30 |
| 3 | 1 | 315 | 4 | 23.50 | 92.68 | 8.11 | 89.41 | 0.66 | 4.07 | 13.09 | 9.01 | 1.10 |
| 4 | 1 | 408 | 6 | 27.50 | 42.39 | 4.80 | 47.04 | 91.34 | 0.30 | 11.71 | 11.41 | 3.70 |
| 4 | 2 | 31 | 5 | 8.50 | 58.15 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 474 | 1 | 45.50 | 40.49 | 5.33 | 69.80 | 28.94 | 1.22 | 12.06 | 10.84 | 4.70 |
| **2** | **1** | 275 | 3 | 27.50 | 58.58 | 4.48 | 69.61 | 29.30 | 1.18 | 8.66 | 7.48 | 1.70 |
| **2** | **2** | 81 | 2 | 8.50 | 86.95 | 1.96 | 61.22 | 47.02 | 0.71 | 3.26 | 2.55 | 0.30 |
| **3** | **1** | 257 | 4 | 23.50 | 69.05 | 4.93 | 72.95 | 23.37 | 1.49 | 8.75 | 7.26 | 1.30 |
| **4** | **1** | 333 | 6 | 27.50 | 40.81 | 3.77 | 38.39 | 134.43 | 0.17 | 9.34 | 9.17 | 3.30 |
| **4** | **2** | 25 | 5 | 8.50 | 56.72 | 0.39 | 18.89 | 376.34 | 0.03 | 0.81 | 0.78 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 397 | 1 | 45.50 | 34.79 | 3.84 | 58.46 | 53.95 | 0.60 | 9.52 | 8.92 | 4.90 |
| **2** | **1** | 230 | 3 | 27.50 | 49.97 | 3.19 | 58.22 | 54.60 | 0.58 | 6.77 | 6.19 | 1.80 |
| **2** | **2** | 68 | 2 | 8.50 | 74.51 | 1.41 | 51.39 | 75.12 | 0.38 | 2.52 | 2.14 | 0.30 |
| **3** | **1** | 215 | 4 | 23.50 | 55.50 | 3.31 | 61.03 | 47.48 | 0.68 | 6.71 | 6.02 | 1.40 |
| **4** | **1** | 279 | 6 | 27.50 | 39.79 | 3.08 | 32.17 | 179.81 | 0.11 | 7.70 | 7.59 | 2.90 |
| **4** | **2** | 21 | 5 | 8.50 | 55.81 | 0.33 | 15.87 | 467.07 | 0.02 | 0.67 | 0.65 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:43:17

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

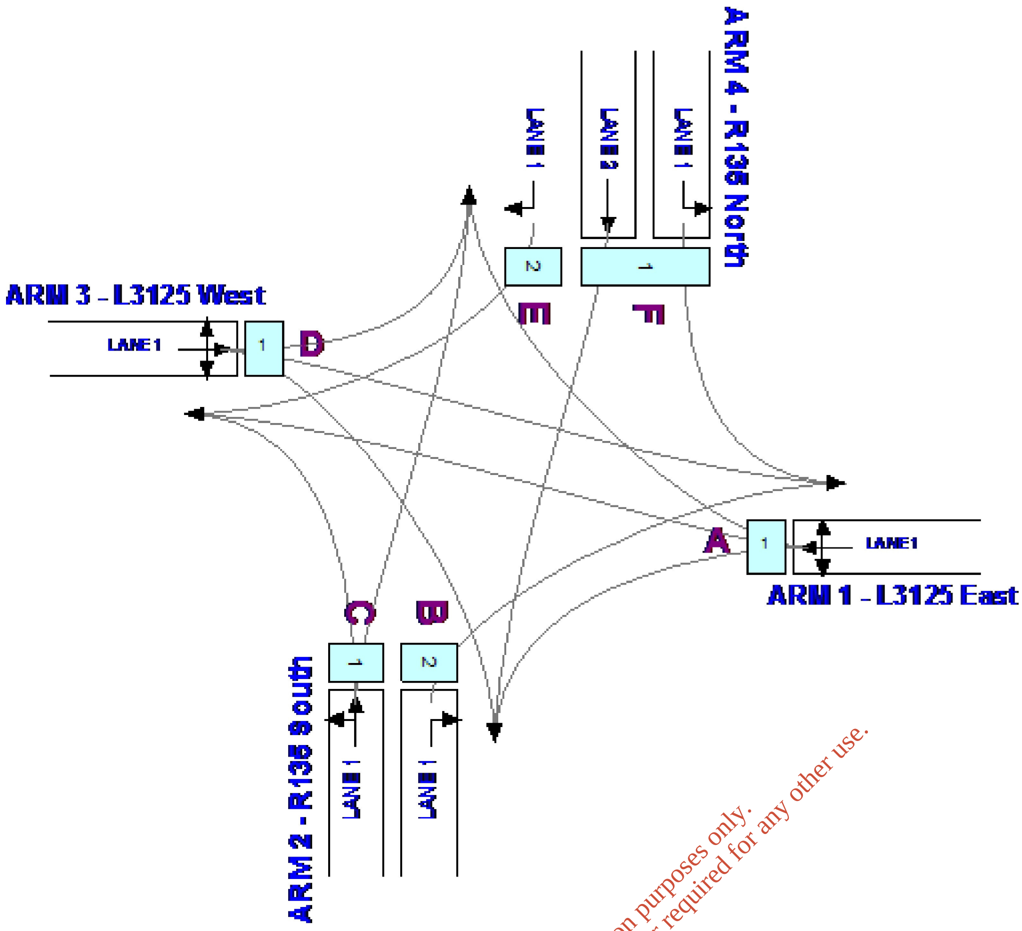
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

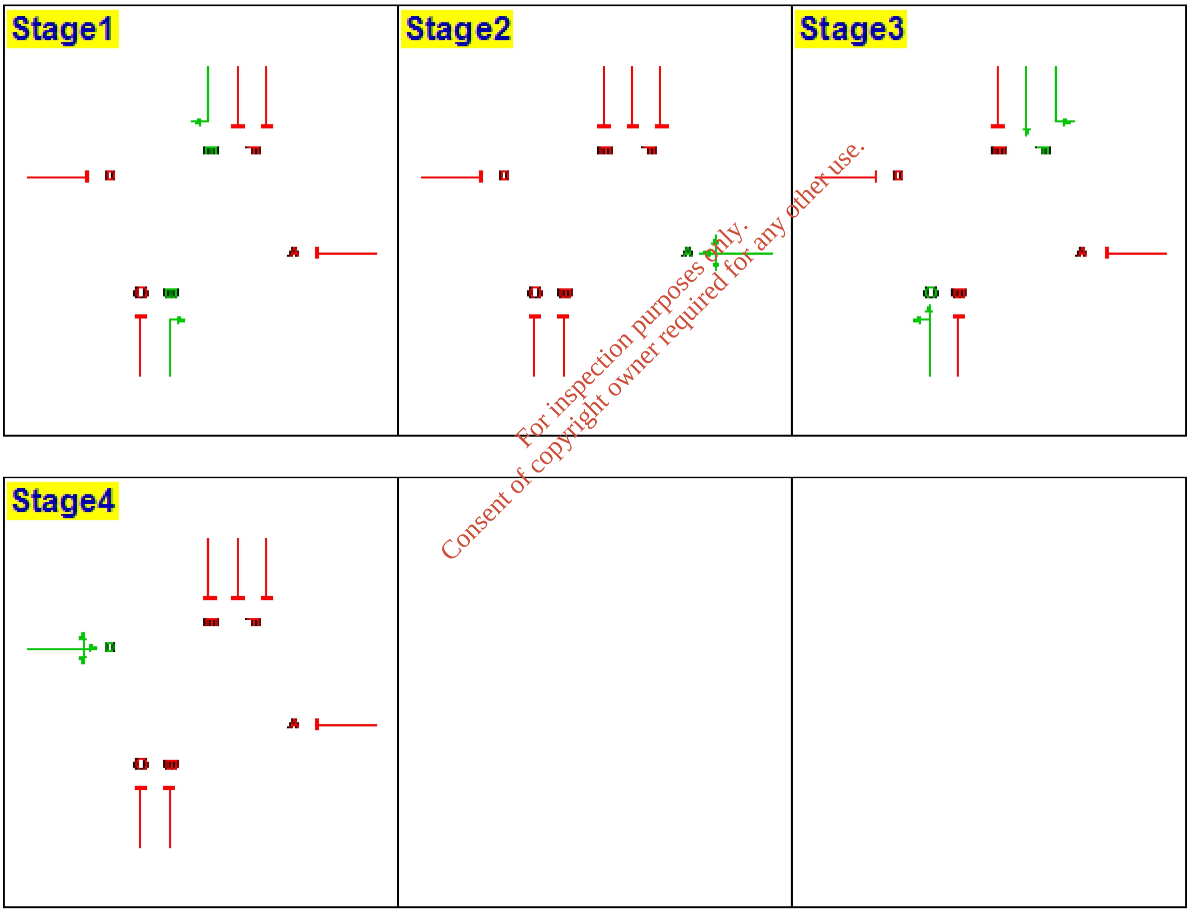
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set3 - 2017 AM Peak With Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 102 | 333 | 94 |
| | **Arm 2** | 89 | - | 226 | 79 |
| | **Arm 3** | 164 | 112 | - | 11 |
| | **Arm 4** | 236 | 139 | 30 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 397 | 474 | 580 | 580 | 474 | 397 |
| 2 - R135 South | 1 | C | 228 | 272 | 333 | 333 | 272 | 228 |
| 2 - R135 South | 2 | B | 68 | 81 | 99 | 99 | 81 | 68 |
| 3 - L3125 West | 1 | D | 215 | 257 | 315 | 315 | 257 | 215 |
| 4 - R135 North | 1 | F | 279 | 334 | 409 | 409 | 334 | 279 |
| 4 - R135 North | 2 | E | 21 | 25 | 31 | 31 | 25 | 21 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 57 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 58 | 34 | 7 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 23.25 | 20.72 | 20.72 | 67.9 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | 2.90 | 22.02 | 22.02 | 65.40 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

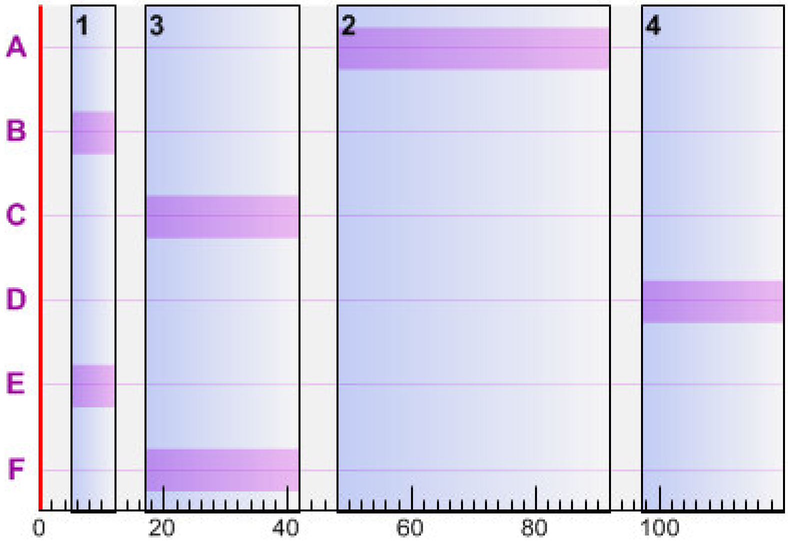
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 25.0 | 42.0 |
| 2 | 48.0 | 44.0 | 92.0 |
| 4 | 97.0 | 23.0 | 0.0 |

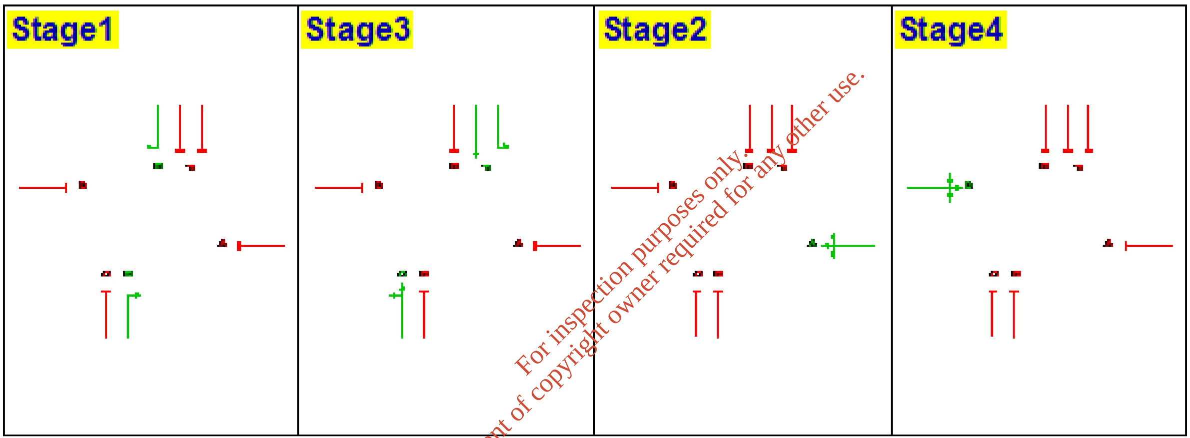
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 48 | 44.0 | 92 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 25.0 | 42 | | | | | | |
| **D** | 97 | 23.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 25.0 | 42 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 484 | A | 45.50 | 40.25 | 5.41 | 71.27 | 26.28 | 1.28 | 12.37 | 11.09 | 28.00 |
| **2** | **1** | 278 | C | 26.50 | 59.84 | 4.62 | 73.02 | 23.25 | 1.36 | 9.01 | 7.65 | 9.50 |
| **2** | **2** | 83 | B | 8.50 | 83.26 | 1.92 | 62.73 | 43.48 | 0.69 | 3.31 | 2.61 | 1.70 |
| **3** | **1** | 262 | D | 24.50 | 60.16 | 4.38 | 71.33 | 26.17 | 1.22 | 8.55 | 7.33 | 8.80 |
| **4** | **1** | 341 | F | 26.50 | 41.99 | 3.98 | 40.80 | 120.61 | 0.20 | 9.70 | 9.50 | 19.10 |
| **4** | **2** | 26 | E | 8.50 | 56.91 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.80 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 397 | 1 | 45.50 | 34.46 | 3.80 | 58.46 | 53.95 | 0.58 | 9.50 | 8.92 | 4.90 |
| **2** | **1** | 228 | 3 | 26.50 | 50.69 | 3.21 | 59.89 | 50.28 | 0.60 | 6.80 | 6.20 | 1.70 |
| **2** | **2** | 68 | 2 | 8.50 | 70.67 | 1.33 | 51.39 | 75.12 | 0.34 | 2.48 | 2.14 | 0.30 |
| **3** | **1** | 215 | 4 | 24.50 | 51.72 | 3.09 | 58.54 | 53.75 | 0.55 | 6.51 | 5.96 | 1.50 |
| **4** | **1** | 279 | 6 | 26.50 | 40.74 | 3.16 | 33.38 | 169.63 | 0.12 | 7.79 | 7.67 | 2.80 |
| **4** | **2** | 21 | 5 | 8.50 | 55.72 | 0.33 | 15.87 | 467.07 | 0.02 | 0.67 | 0.65 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 474 | 1 | 45.50 | 39.22 | 5.16 | 69.80 | 28.94 | 1.13 | 11.97 | 10.84 | 4.70 |
| **2** | **1** | 272 | 3 | 26.50 | 57.73 | 4.36 | 71.44 | 25.97 | 1.16 | 8.63 | 7.47 | 1.60 |
| **2** | **2** | 81 | 2 | 8.50 | 79.92 | 1.80 | 61.22 | 47.02 | 0.59 | 3.14 | 2.55 | 0.30 |
| **3** | **1** | 257 | 4 | 24.50 | 58.39 | 4.17 | 69.97 | 28.62 | 1.06 | 8.25 | 7.19 | 1.50 |
| **4** | **1** | 334 | 6 | 26.50 | 41.83 | 3.88 | 39.96 | 125.23 | 0.19 | 9.48 | 9.30 | 3.10 |
| **4** | **2** | 25 | 5 | 8.50 | 56.66 | 0.39 | 18.89 | 376.34 | 0.03 | 0.81 | 0.78 | 0.10 |

## Traffic Stream Details (07:45-08:00)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 580 | 1 | 45.50 | 51.19 | 8.25 | 85.41 | 5.38 | 3.23 | 16.81 | 13.58 | 3.60 |
| **2** | **1** | 333 | 3 | 26.50 | 75.65 | 7.00 | 87.47 | 2.90 | 3.24 | 12.51 | 9.27 | 1.30 |
| **2** | **2** | 99 | 2 | 8.50 | 96.58 | 2.66 | 74.82 | 20.29 | 1.21 | 4.34 | 3.13 | 0.30 |
| **3** | **1** | 315 | 4 | 24.50 | 74.87 | 6.55 | 85.76 | 4.94 | 2.85 | 11.77 | 8.92 | 1.20 |
| **4** | **1** | 409 | 6 | 26.50 | 43.54 | 4.95 | 48.93 | 83.93 | 0.33 | 11.90 | 11.57 | 3.50 |
| **4** | **2** | 31 | 5 | 8.50 | 58.11 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 580 | 1 | 45.50 | 53.57 | 8.63 | 85.41 | 5.38 | 3.37 | 16.95 | 13.58 | 3.60 |
| **2** | **1** | 333 | 3 | 26.50 | 82.67 | 7.65 | 87.47 | 2.90 | 3.54 | 12.81 | 9.27 | 1.30 |
| **2** | **2** | 99 | 2 | 8.50 | 103.04 | 2.83 | 74.82 | 20.29 | 1.29 | 4.42 | 3.13 | 0.30 |
| **3** | **1** | 315 | 4 | 24.50 | 80.68 | 7.06 | 85.76 | 4.94 | 3.08 | 11.99 | 8.92 | 1.20 |
| **4** | **1** | 409 | 6 | 26.50 | 43.56 | 4.95 | 48.93 | 83.93 | 0.33 | 11.90 | 11.57 | 3.50 |
| **4** | **2** | 31 | 5 | 8.50 | 58.15 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 474 | 1 | 45.50 | 40.49 | 5.33 | 69.80 | 28.94 | 1.22 | 12.06 | 10.84 | 4.70 |
| **2** | **1** | 272 | 3 | 26.50 | 62.50 | 4.72 | 71.44 | 25.97 | 1.34 | 8.81 | 7.47 | 1.60 |
| **2** | **2** | 81 | 2 | 8.50 | 86.95 | 1.96 | 61.22 | 47.02 | 0.71 | 3.26 | 2.55 | 0.30 |
| **3** | **1** | 257 | 4 | 24.50 | 62.42 | 4.46 | 69.97 | 28.62 | 1.21 | 8.40 | 7.19 | 1.50 |
| **4** | **1** | 334 | 6 | 26.50 | 41.86 | 3.88 | 39.96 | 125.23 | 0.19 | 9.48 | 9.30 | 3.10 |
| **4** | **2** | 25 | 5 | 8.50 | 56.72 | 0.39 | 18.89 | 376.34 | 0.03 | 0.81 | 0.78 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 397 | 1 | 45.50 | 34.79 | 3.84 | 58.46 | 53.95 | 0.60 | 9.52 | 8.92 | 4.90 |
| **2** | **1** | 228 | 3 | 26.50 | 51.91 | 3.29 | 59.89 | 50.28 | 0.64 | 6.84 | 6.20 | 1.70 |
| **2** | **2** | 68 | 2 | 8.50 | 74.51 | 1.41 | 51.39 | 75.12 | 0.38 | 2.52 | 2.14 | 0.30 |
| **3** | **1** | 215 | 4 | 24.50 | 52.84 | 3.16 | 58.54 | 53.75 | 0.59 | 6.55 | 5.96 | 1.50 |
| **4** | **1** | 279 | 6 | 26.50 | 40.75 | 3.16 | 33.38 | 169.63 | 0.12 | 7.79 | 7.67 | 2.80 |
| **4** | **2** | 21 | 5 | 8.50 | 55.81 | 0.33 | 15.87 | 467.07 | 0.02 | 0.67 | 0.65 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:43:49

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

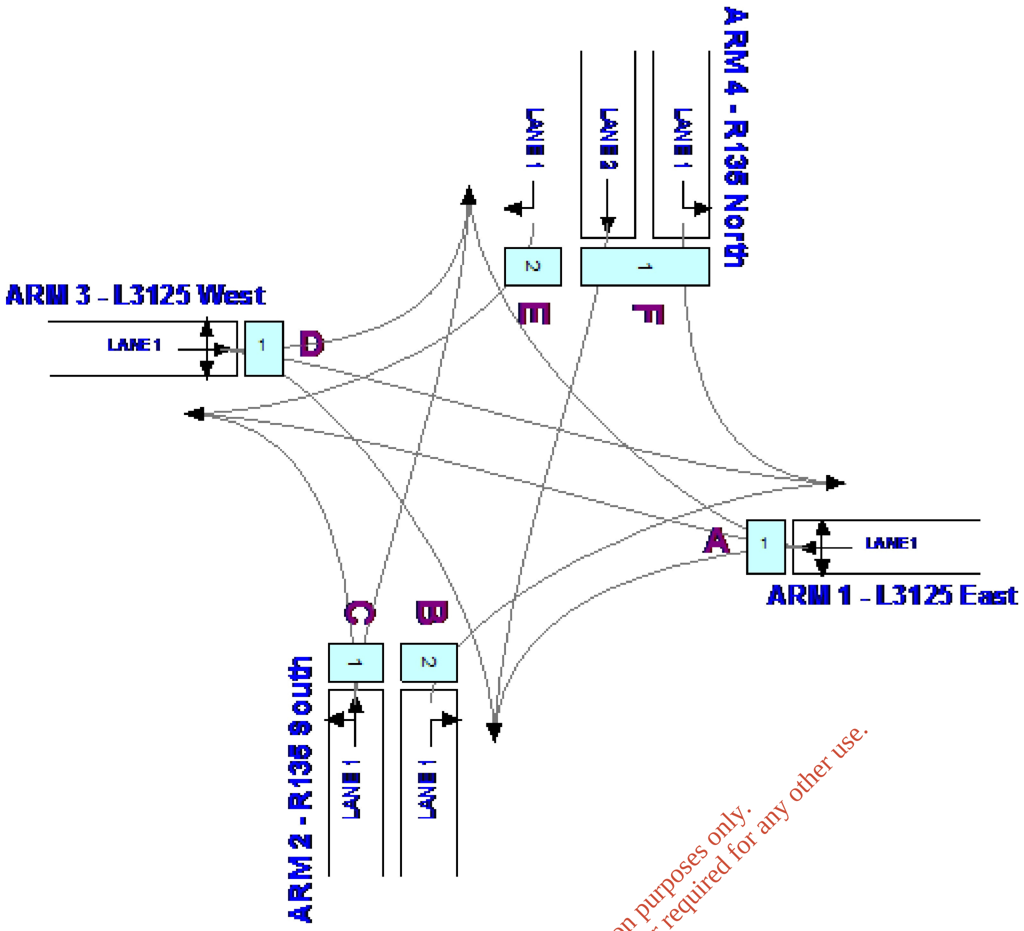
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

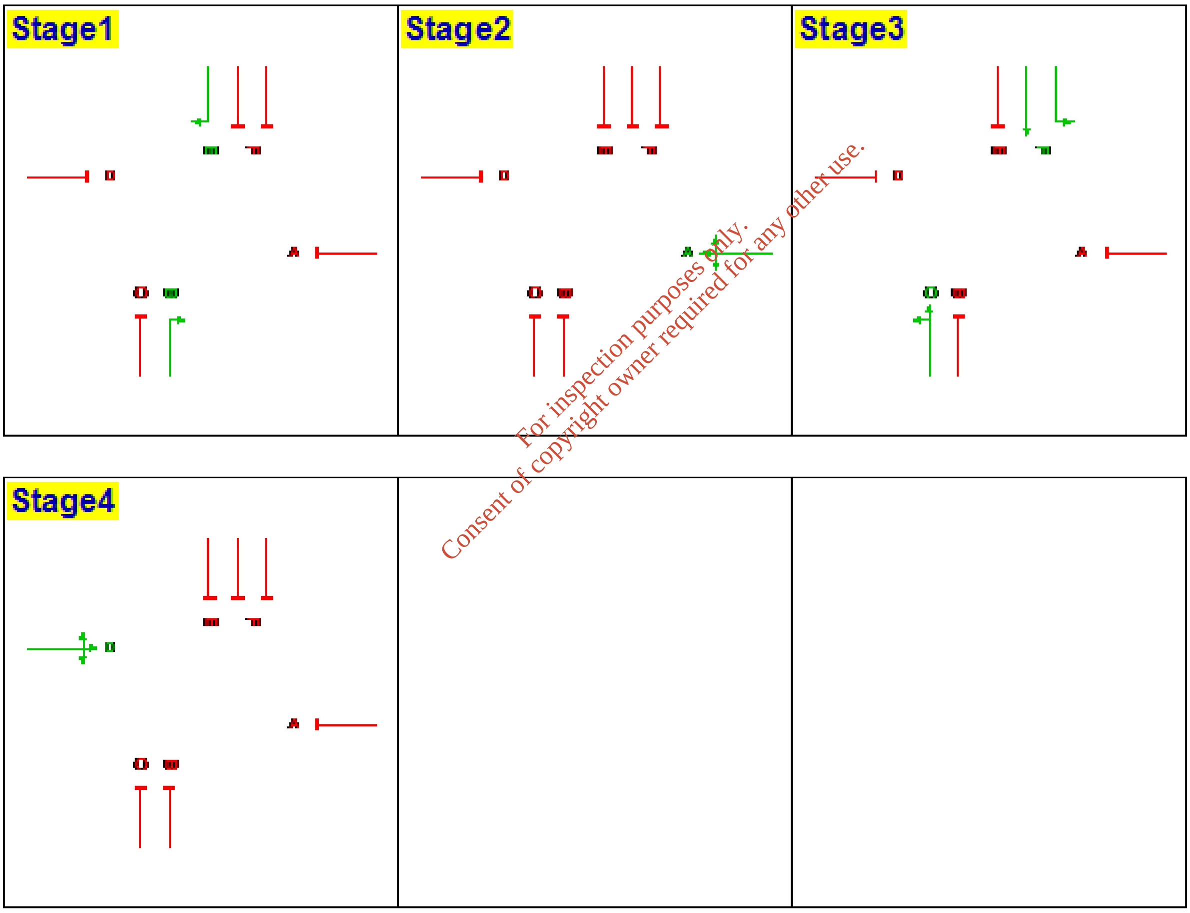
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set4 - 2022 AM Peak No Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 105 | 345 | 97 |
| | **Arm 2** | 92 | - | 234 | 80 |
| | **Arm 3** | 170 | 116 | - | 12 |
| | **Arm 4** | 244 | 143 | 31 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 410 | 490 | 600 | 600 | 490 | 410 |
| 2 - R135 South | 1 | C | 238 | 284 | 347 | 347 | 284 | 238 |
| 2 - R135 South | 2 | B | 70 | 84 | 102 | 102 | 84 | 70 |
| 3 - L3125 West | 1 | D | 224 | 267 | 327 | 327 | 267 | 224 |
| 4 - R135 North | 1 | F | 288 | 344 | 422 | 422 | 344 | 288 |
| 4 - R135 North | 2 | E | 22 | 26 | 32 | 32 | 26 | 22 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 58 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 58 | 34 | 7 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 19.55 | 22.04 | 22.04 | 67.3 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -0.38 | 23.85 | 23.85 | 64.50 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

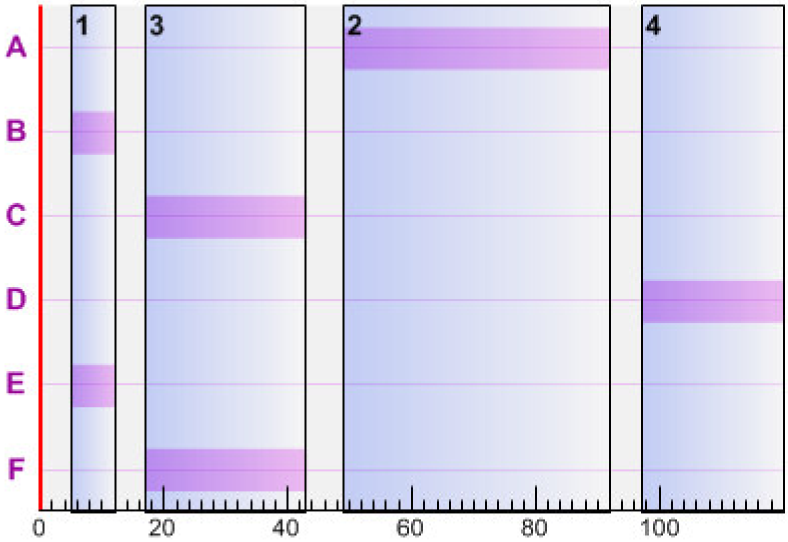
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 26.0 | 43.0 |
| 2 | 49.0 | 43.0 | 92.0 |
| 4 | 97.0 | 23.0 | 0.0 |

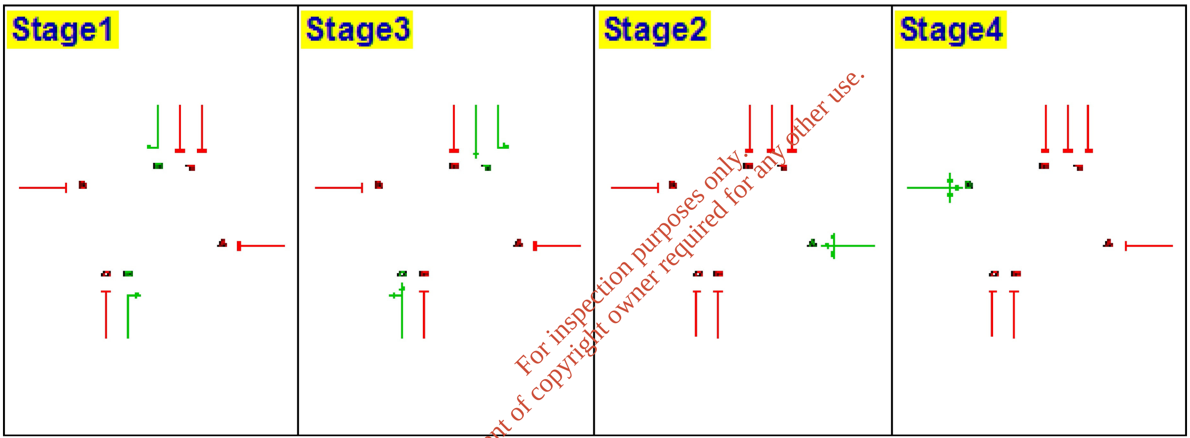
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 49 | 43.0 | 92 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 26.0 | 43 | | | | | | |
| **D** | 97 | 23.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 26.0 | 43 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 500 | A | 44.50 | 43.63 | 6.06 | 75.28 | 19.55 | 1.66 | 13.32 | 11.65 | 25.60 |
| **2** | **1** | 290 | C | 27.50 | 58.99 | 4.75 | 73.40 | 22.61 | 1.40 | 9.31 | 7.91 | 10.10 |
| **2** | **2** | 85 | B | 8.50 | 85.16 | 2.01 | 64.24 | 40.10 | 0.76 | 3.44 | 2.68 | 1.80 |
| **3** | **1** | 273 | D | 24.50 | 62.92 | 4.77 | 74.33 | 21.09 | 1.48 | 9.14 | 7.66 | 8.60 |
| **4** | **1** | 351 | F | 27.50 | 41.15 | 4.01 | 40.47 | 122.41 | 0.20 | 9.89 | 9.70 | 20.40 |
| **4** | **2** | 27 | E | 8.50 | 57.15 | 0.43 | 20.41 | 341.06 | 0.03 | 0.88 | 0.84 | 0.80 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 410 | 1 | 44.50 | 36.32 | 4.14 | 61.73 | 45.79 | 0.70 | 10.07 | 9.37 | 4.70 |
| **2** | **1** | 238 | 3 | 27.50 | 49.89 | 3.30 | 60.24 | 49.40 | 0.61 | 7.03 | 6.42 | 1.80 |
| **2** | **2** | 70 | 2 | 8.50 | 71.63 | 1.39 | 52.90 | 70.12 | 0.37 | 2.57 | 2.20 | 0.30 |
| **3** | **1** | 224 | 4 | 24.50 | 52.79 | 3.28 | 60.99 | 47.57 | 0.63 | 6.85 | 6.22 | 1.50 |
| **4** | **1** | 288 | 6 | 27.50 | 39.94 | 3.20 | 33.20 | 171.06 | 0.12 | 7.97 | 7.85 | 3.00 |
| **4** | **2** | 22 | 5 | 8.50 | 55.94 | 0.34 | 16.63 | 441.30 | 0.02 | 0.71 | 0.68 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 490 | 1 | 44.50 | 42.21 | 5.75 | 73.78 | 21.99 | 1.45 | 12.84 | 11.39 | 4.30 |
| **2** | **1** | 284 | 3 | 27.50 | 56.94 | 4.49 | 71.88 | 25.20 | 1.20 | 8.94 | 7.74 | 1.70 |
| **2** | **2** | 84 | 2 | 8.50 | 82.11 | 1.92 | 63.48 | 41.77 | 0.67 | 3.31 | 2.65 | 0.30 |
| **3** | **1** | 267 | 4 | 24.50 | 60.43 | 4.48 | 72.69 | 23.81 | 1.25 | 8.73 | 7.48 | 1.40 |
| **4** | **1** | 344 | 6 | 27.50 | 41.01 | 3.92 | 39.66 | 126.93 | 0.18 | 9.68 | 9.49 | 3.40 |
| **4** | **2** | 26 | 5 | 8.50 | 56.89 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

## Traffic Stream Details (07:45-08:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 600 | 1 | 44.50 | 59.00 | 9.83 | 90.34 | -0.38 | 4.79 | 19.09 | 14.30 | 3.00 |
| **2** | **1** | 347 | 3 | 27.50 | 74.87 | 7.22 | 87.83 | 2.47 | 3.36 | 12.94 | 9.58 | 1.40 |
| **2** | **2** | 102 | 2 | 8.50 | 100.34 | 2.84 | 77.09 | 16.75 | 1.37 | 4.59 | 3.22 | 0.30 |
| **3** | **1** | 327 | 4 | 24.50 | 80.36 | 7.30 | 89.03 | 1.09 | 3.59 | 12.87 | 9.28 | 1.20 |
| **4** | **1** | 422 | 6 | 27.50 | 42.70 | 5.01 | 48.65 | 84.99 | 0.33 | 12.17 | 11.84 | 3.70 |
| **4** | **2** | 32 | 5 | 8.50 | 58.36 | 0.52 | 24.18 | 272.14 | 0.05 | 1.05 | 1.00 | 0.20 |



## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 600 | 1 | 44.50 | 64.68 | 10.78 | 90.34 | -0.38 | 5.22 | 19.52 | 14.30 | 2.90 |
| **2** | **1** | 347 | 3 | 27.50 | 81.93 | 7.90 | 87.83 | 2.47 | 3.68 | 13.26 | 9.58 | 1.30 |
| **2** | **2** | 102 | 2 | 8.50 | 108.27 | 3.07 | 77.09 | 16.75 | 1.47 | 4.70 | 3.22 | 0.30 |
| **3** | **1** | 327 | 4 | 24.50 | 89.45 | 8.12 | 89.03 | 1.09 | 3.99 | 13.27 | 9.28 | 1.10 |
| **4** | **1** | 422 | 6 | 27.50 | 42.72 | 5.01 | 48.65 | 84.99 | 0.33 | 12.17 | 11.84 | 3.70 |
| **4** | **2** | 32 | 5 | 8.50 | 58.43 | 0.52 | 24.18 | 272.14 | 0.05 | 1.05 | 1.00 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 490 | 1 | 44.50 | 45.02 | 6.13 | 73.78 | 21.99 | 1.60 | 12.99 | 11.39 | 4.30 |
| **2** | **1** | 284 | 3 | 27.50 | 61.69 | 4.87 | 71.88 | 25.20 | 1.38 | 9.11 | 7.74 | 1.70 |
| **2** | **2** | 84 | 2 | 8.50 | 90.97 | 2.12 | 63.48 | 41.77 | 0.82 | 3.47 | 2.65 | 0.30 |
| **3** | **1** | 267 | 4 | 24.50 | 66.78 | 4.95 | 72.69 | 23.81 | 1.46 | 8.94 | 7.48 | 1.40 |
| **4** | **1** | 344 | 6 | 27.50 | 41.03 | 3.92 | 39.66 | 126.93 | 0.19 | 9.68 | 9.49 | 3.40 |
| **4** | **2** | 26 | 5 | 8.50 | 56.98 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 410 | 1 | 44.50 | 36.83 | 4.19 | 61.73 | 45.79 | 0.73 | 10.10 | 9.37 | 4.70 |
| **2** | **1** | 238 | 3 | 27.50 | 51.07 | 3.38 | 60.24 | 49.40 | 0.65 | 7.07 | 6.42 | 1.80 |
| **2** | **2** | 70 | 2 | 8.50 | 76.22 | 1.48 | 52.90 | 70.12 | 0.42 | 2.62 | 2.20 | 0.30 |
| **3** | **1** | 224 | 4 | 24.50 | 54.28 | 3.38 | 60.99 | 47.57 | 0.68 | 6.90 | 6.22 | 1.50 |
| **4** | **1** | 288 | 6 | 27.50 | 39.95 | 3.20 | 33.20 | 171.06 | 0.12 | 7.97 | 7.85 | 3.00 |
| **4** | **2** | 22 | 5 | 8.50 | 56.02 | 0.34 | 16.63 | 441.30 | 0.02 | 0.71 | 0.68 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:02:56

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

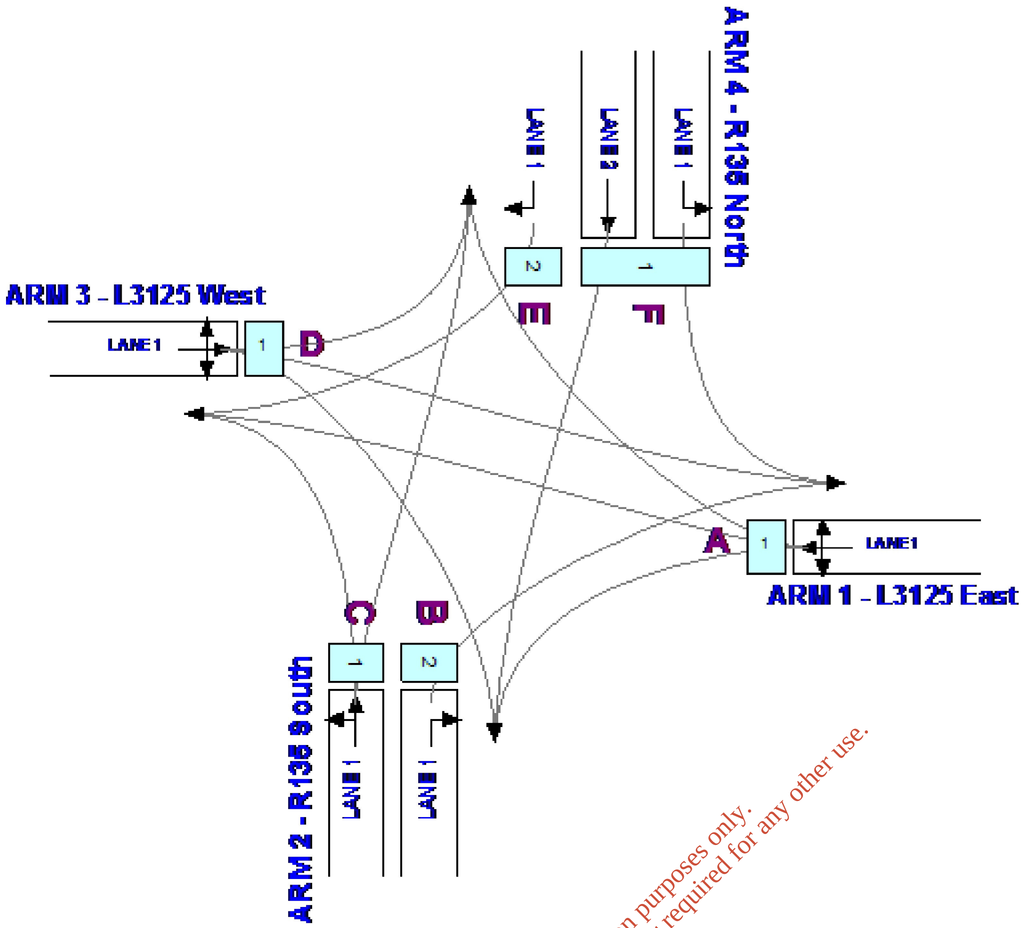
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

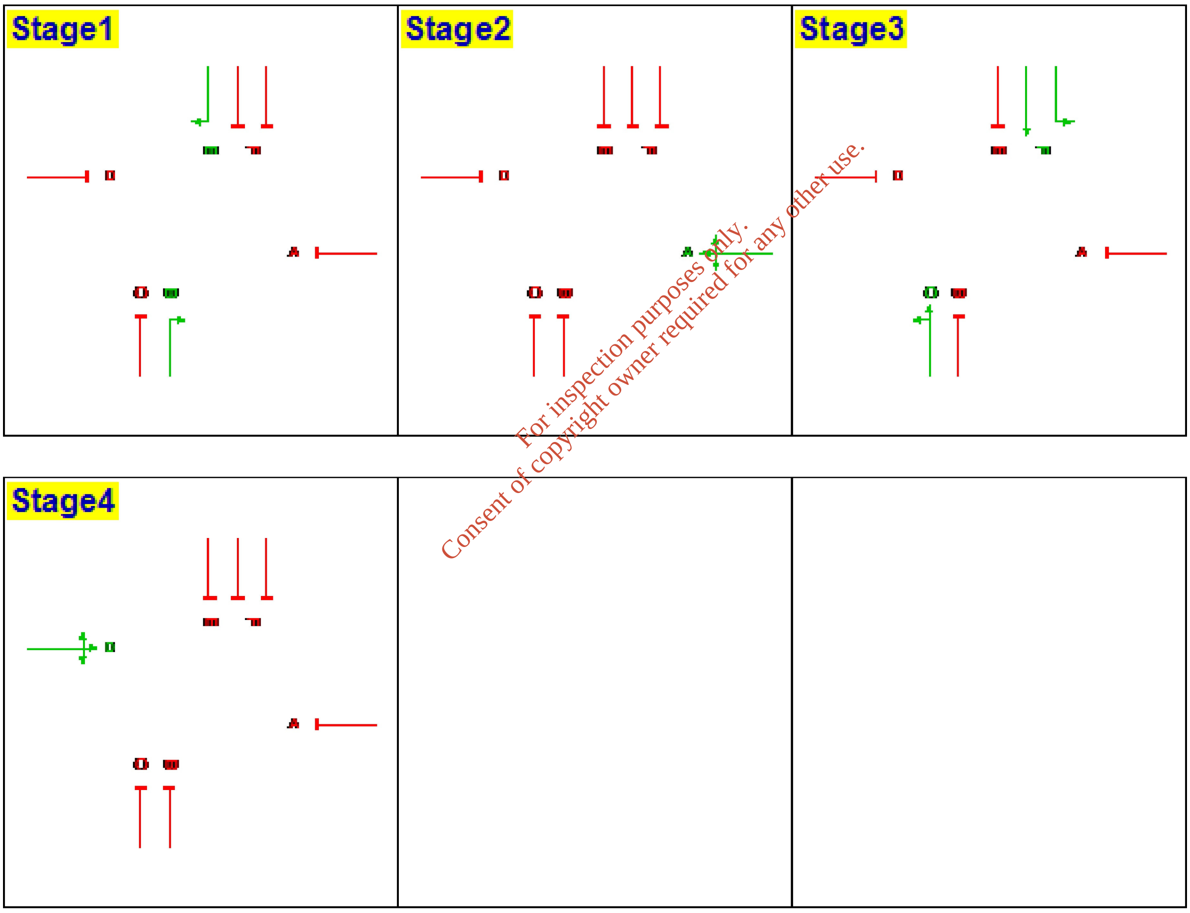
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak With Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2022 PM Peak With Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 96 | 232 | 227 |
| | **Arm 2** | 143 | - | 142 | 135 |
| | **Arm 3** | 188 | 184 | - | 25 |
| | **Arm 4** | 186 | 103 | 19 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 416 | 497 | 609 | 609 | 497 | 416 |
| 2 - R135 South | 1 | C | 208 | 248 | 304 | 304 | 248 | 208 |
| 2 - R135 South | 2 | B | 107 | 128 | 157 | 157 | 128 | 107 |
| 3 - L3125 West | 1 | D | 295 | 352 | 431 | 431 | 352 | 295 |
| 4 - R135 North | 1 | F | 215 | 257 | 314 | 314 | 257 | 215 |
| 4 - R135 North | 2 | E | 14 | 17 | 20 | 20 | 17 | 14 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 60 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 10.87 | 25.77 | 25.77 | 55.9 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -7.65 | 30.05 | 30.05 | 52.90 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

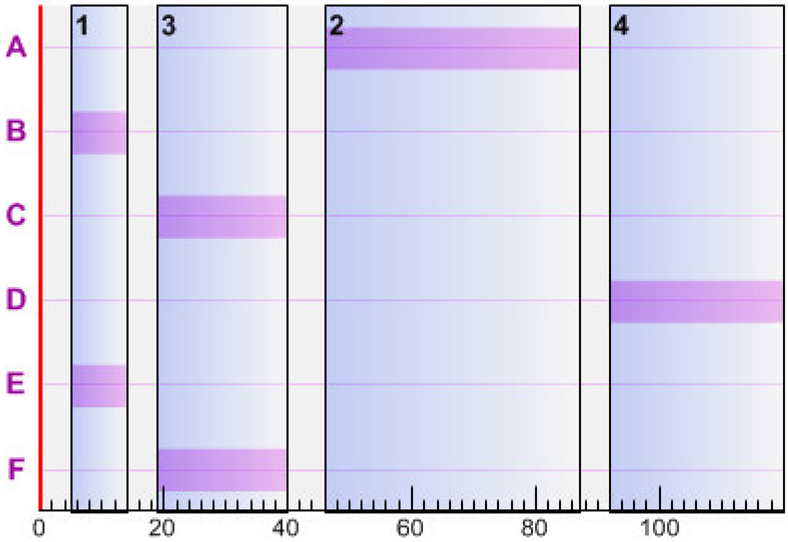
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 21.0 | 40.0 |
| 2 | 46.0 | 41.0 | 87.0 |
| 4 | 92.0 | 28.0 | 0.0 |

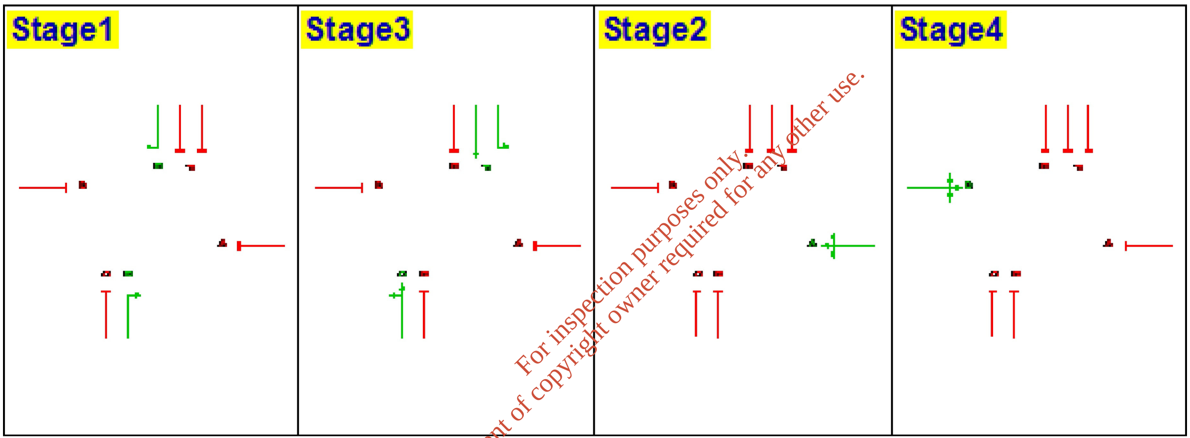
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 46 | 41.0 | 87 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 21.0 | 40 | | | | | | |
| **D** | 92 | 28.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 21.0 | 40 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 507 | A | 42.50 | 49.36 | 6.95 | 79.93 | 12.60 | 2.30 | 14.45 | 12.15 | 21.70 |
| **2** | **1** | 253 | C | 22.50 | 71.56 | 5.03 | 78.27 | 14.99 | 1.91 | 9.13 | 7.22 | 6.90 |
| **2** | **2** | 131 | B | 10.50 | 106.06 | 3.86 | 80.15 | 12.29 | 2.06 | 6.15 | 4.09 | 2.40 |
| **3** | **1** | 359 | D | 29.50 | 64.65 | 6.45 | 81.18 | 10.87 | 2.42 | 12.15 | 9.72 | 10.90 |
| **4** | **1** | 262 | F | 22.50 | 44.51 | 3.24 | 36.92 | 143.79 | 0.15 | 7.64 | 7.49 | 13.40 |
| **4** | **2** | 17 | E | 10.50 | 52.10 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 42.50 | 39.33 | 4.54 | 65.58 | 37.23 | 0.87 | 10.64 | 9.77 | 4.20 |
| **2** | **1** | 208 | 3 | 22.50 | 57.04 | 3.30 | 64.35 | 39.87 | 0.76 | 6.64 | 5.88 | 1.20 |
| **2** | **2** | 107 | 2 | 10.50 | 75.67 | 2.25 | 65.46 | 37.48 | 0.75 | 4.08 | 3.33 | 0.40 |
| **3** | **1** | 295 | 4 | 29.50 | 50.68 | 4.15 | 66.70 | 34.92 | 0.90 | 8.78 | 7.88 | 2.10 |
| **4** | **1** | 215 | 6 | 22.50 | 43.44 | 2.59 | 30.30 | 197.08 | 0.09 | 6.18 | 6.08 | 2.00 |
| **4** | **2** | 14 | 5 | 10.50 | 51.69 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 42.50 | 47.06 | 6.50 | 78.35 | 14.87 | 1.93 | 13.81 | 11.88 | 3.70 |
| **2** | **1** | 248 | 3 | 22.50 | 67.45 | 4.65 | 76.72 | 17.31 | 1.56 | 8.63 | 7.07 | 1.20 |
| **2** | **2** | 128 | 2 | 10.50 | 94.15 | 3.35 | 78.31 | 14.93 | 1.52 | 5.52 | 4.00 | 0.40 |
| **3** | **1** | 352 | 4 | 29.50 | 60.76 | 5.94 | 79.59 | 13.08 | 1.97 | 11.48 | 9.52 | 1.90 |
| **4** | **1** | 257 | 6 | 22.50 | 44.39 | 3.17 | 36.21 | 148.53 | 0.14 | 7.48 | 7.34 | 2.20 |
| **4** | **2** | 17 | 5 | 10.50 | 52.09 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:00-17:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 609 | 1 | 42.50 | 72.29 | 12.23 | 96.01 | -6.26 | 7.82 | 22.75 | 14.93 | 2.10 |
| **2** | **1** | 304 | 3 | 22.50 | 95.67 | 8.08 | 94.04 | -4.30 | 4.92 | 13.69 | 8.77 | 0.90 |
| **2** | **2** | 157 | 2 | 10.50 | 133.33 | 5.81 | 96.05 | -6.30 | 4.16 | 9.09 | 4.93 | 0.40 |
| **3** | **1** | 431 | 4 | 29.50 | 91.53 | 10.96 | 97.46 | -7.65 | 7.38 | 19.24 | 11.86 | 1.20 |
| **4** | **1** | 314 | 6 | 22.50 | 45.83 | 4.00 | 44.24 | 103.41 | 0.25 | 9.32 | 9.07 | 2.50 |
| **4** | **2** | 20 | 5 | 10.50 | 52.52 | 0.29 | 12.24 | 635.52 | 0.01 | 0.62 | 0.61 | 0.10 |



## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 609 | 1 | 42.50 | 87.90 | 14.87 | 96.01 | -6.26 | 9.48 | 24.41 | 14.93 | 2.00 |
| **2** | **1** | 304 | 3 | 22.50 | 115.03 | 9.71 | 94.04 | -4.30 | 5.92 | 14.68 | 8.77 | 0.90 |
| **2** | **2** | 157 | 2 | 10.50 | 169.38 | 7.39 | 96.05 | -6.30 | 5.27 | 10.20 | 4.93 | 0.40 |
| **3** | **1** | 431 | 4 | 29.50 | 115.61 | 13.84 | 97.46 | -7.65 | 9.39 | 21.24 | 11.86 | 1.10 |
| **4** | **1** | 314 | 6 | 22.50 | 45.85 | 4.00 | 44.24 | 103.41 | 0.25 | 9.32 | 9.07 | 2.50 |
| **4** | **2** | 20 | 5 | 10.50 | 52.52 | 0.29 | 12.24 | 635.52 | 0.01 | 0.62 | 0.61 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 42.50 | 56.04 | 7.74 | 78.35 | 14.87 | 2.25 | 14.13 | 11.88 | 3.60 |
| **2** | **1** | 248 | 3 | 22.50 | 84.27 | 5.80 | 76.72 | 17.31 | 1.98 | 9.04 | 7.07 | 1.10 |
| **2** | **2** | 128 | 2 | 10.50 | 144.60 | 5.14 | 78.31 | 14.93 | 2.36 | 6.36 | 4.00 | 0.40 |
| **3** | **1** | 352 | 4 | 29.50 | 81.15 | 7.94 | 79.59 | 13.08 | 2.49 | 12.01 | 9.52 | 1.80 |
| **4** | **1** | 257 | 6 | 22.50 | 44.41 | 3.17 | 36.21 | 148.53 | 0.14 | 7.48 | 7.34 | 2.20 |
| **4** | **2** | 17 | 5 | 10.50 | 52.11 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 42.50 | 40.27 | 4.65 | 65.58 | 37.23 | 0.93 | 10.69 | 9.77 | 4.20 |
| **2** | **1** | 208 | 3 | 22.50 | 60.06 | 3.47 | 64.35 | 39.87 | 0.84 | 6.72 | 5.88 | 1.20 |
| **2** | **2** | 107 | 2 | 10.50 | 89.98 | 2.67 | 65.46 | 37.48 | 0.92 | 4.25 | 3.33 | 0.40 |
| **3** | **1** | 295 | 4 | 29.50 | 52.97 | 4.34 | 66.70 | 34.92 | 0.98 | 8.86 | 7.88 | 2.10 |
| **4** | **1** | 215 | 6 | 22.50 | 43.45 | 2.60 | 30.30 | 197.08 | 0.09 | 6.18 | 6.08 | 2.00 |
| **4** | **2** | 14 | 5 | 10.50 | 51.71 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk



**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:44:59

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

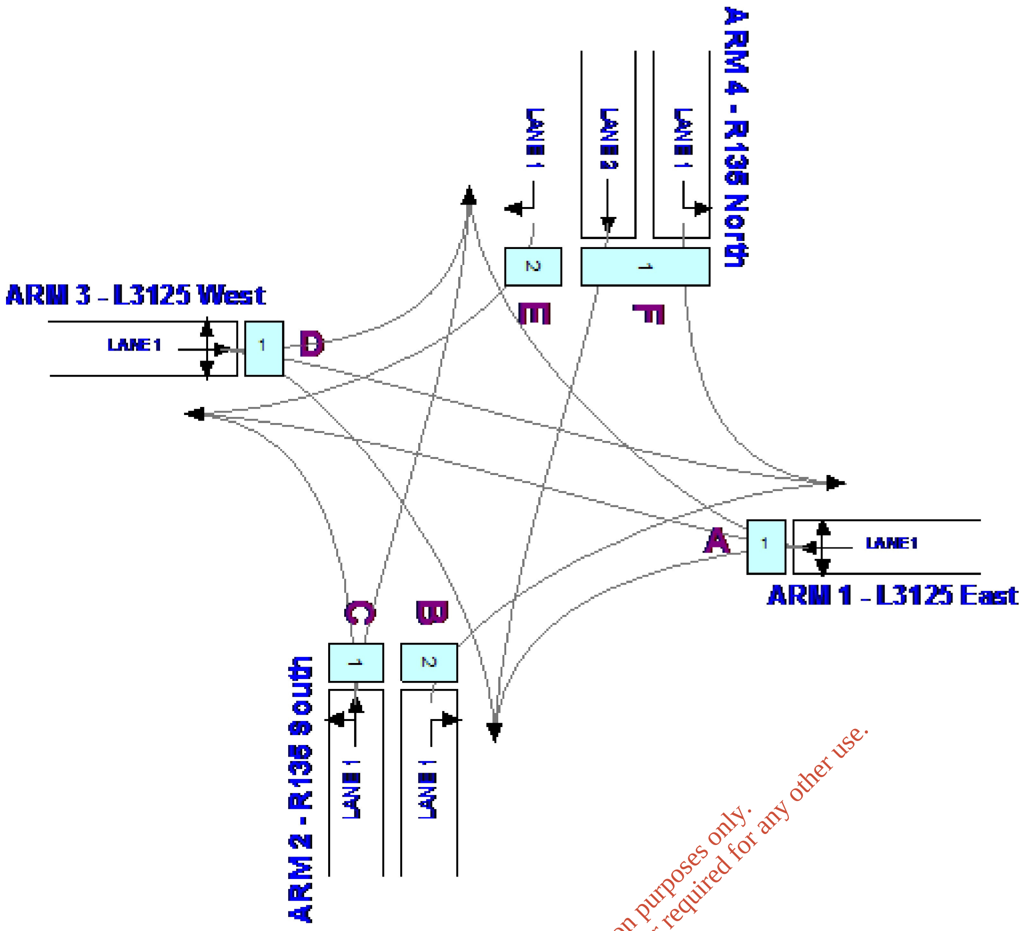
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 0.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram






# Signals

### Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

### Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

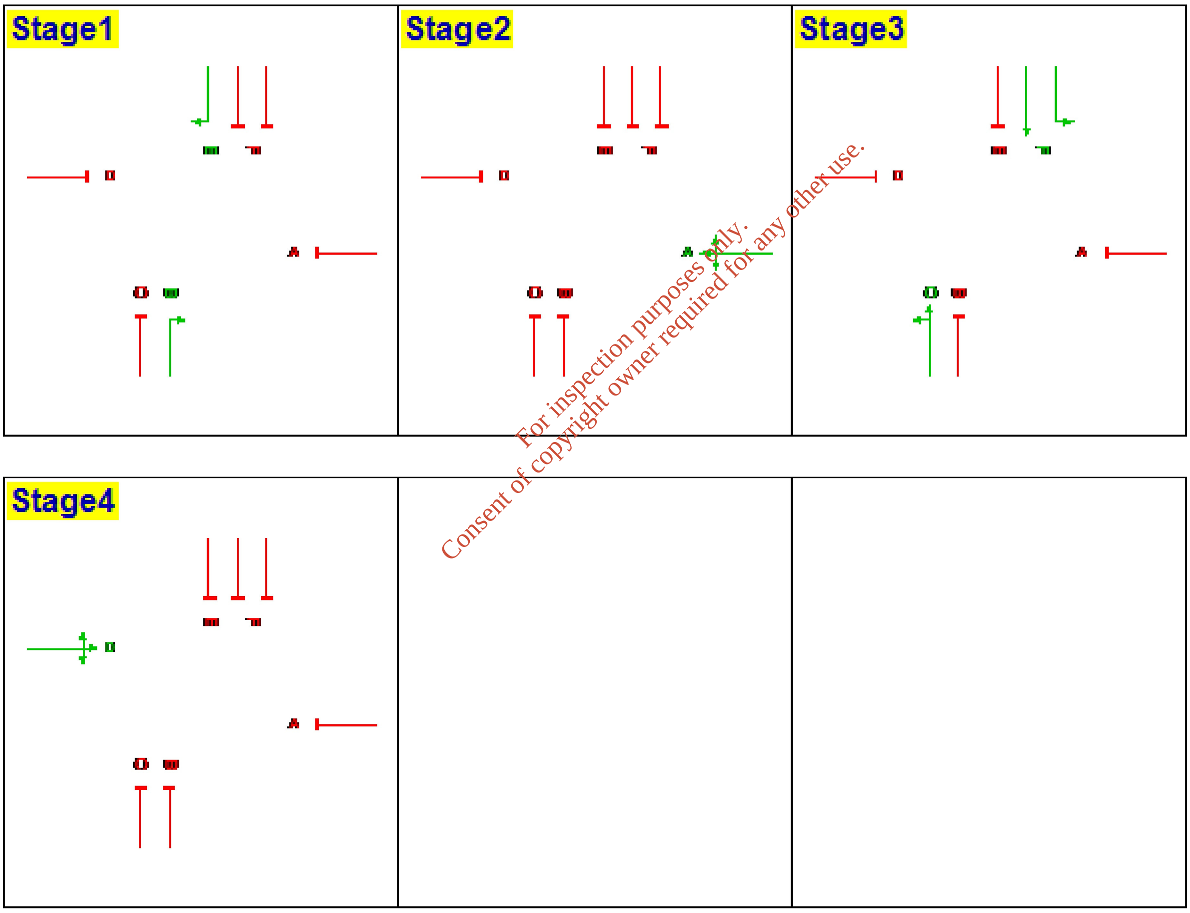
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set6 - 2022 AM Peak Sensitivity

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 105 | 345 | 97 |
| | **Arm 2** | 92 | - | 234 | 103 |
| | **Arm 3** | 170 | 116 | - | 11 |
| | **Arm 4** | 244 | 166 | 31 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 410 | 490 | 600 | 600 | 490 | 410 |
| 2 - R135 South | 1 | C | 254 | 304 | 372 | 372 | 304 | 254 |
| 2 - R135 South | 2 | B | 68 | 81 | 99 | 99 | 81 | 68 |
| 3 - L3125 West | 1 | D | 223 | 266 | 326 | 326 | 266 | 223 |
| 4 - R135 North | 1 | F | 308 | 367 | 450 | 450 | 367 | 308 |
| 4 - R135 North | 2 | E | 23 | 28 | 34 | 34 | 28 | 23 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 55 | 24 | 21 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 55 | 38 | 7 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 16.57 | 22.93 | 22.93 | 68.5 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -2.74 | 25.12 | 25.12 | 65.70 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

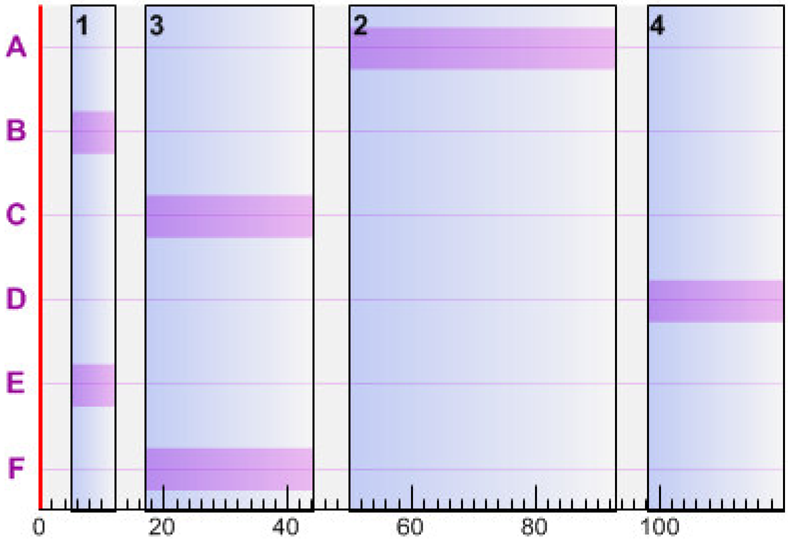
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 27.0 | 44.0 |
| 2 | 50.0 | 43.0 | 93.0 |
| 4 | 98.0 | 22.0 | 0.0 |



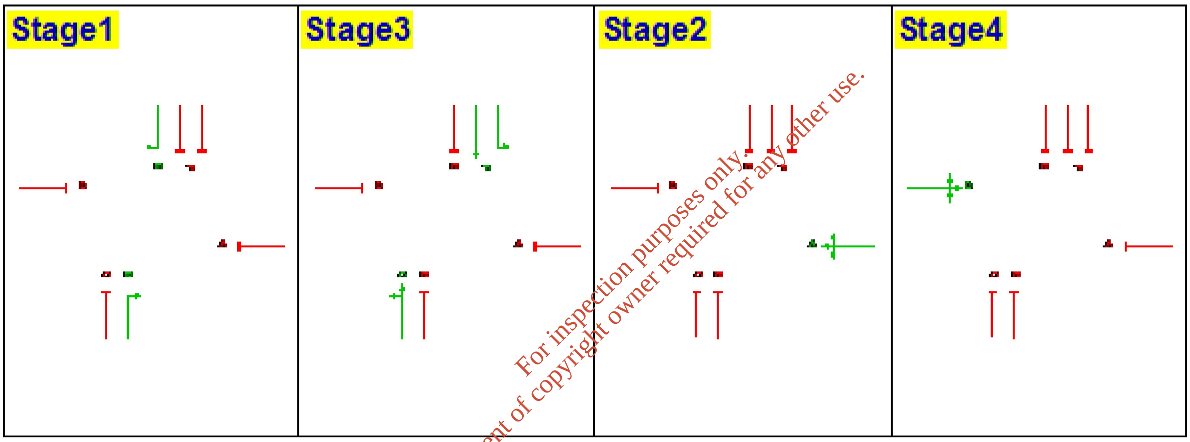
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 50 | 43.0 | 93 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 27.0 | 44 | | | | | | |
| **D** | 98 | 22.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 27.0 | 44 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 500 | A | 44.50 | 43.63 | 6.06 | 75.28 | 19.55 | 1.66 | 13.32 | 11.65 | 25.60 |
| **2** | **1** | 310 | C | 28.50 | 60.03 | 5.17 | 75.71 | 18.87 | 1.63 | 10.03 | 8.40 | 10.50 |
| **2** | **2** | 83 | B | 8.50 | 83.26 | 1.92 | 62.73 | 43.48 | 0.69 | 3.31 | 2.61 | 1.70 |
| **3** | **1** | 272 | D | 23.50 | 67.59 | 5.11 | 77.21 | 16.57 | 1.79 | 9.50 | 7.71 | 7.80 |
| **4** | **1** | 375 | F | 28.50 | 40.61 | 4.23 | 41.72 | 115.74 | 0.21 | 10.52 | 10.30 | 22.10 |
| **4** | **2** | 28 | E | 8.50 | 57.39 | 0.45 | 21.16 | 325.30 | 0.04 | 0.91 | 0.87 | 0.80 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 410 | 1 | 44.50 | 36.32 | 4.14 | 61.73 | 45.79 | 0.70 | 10.07 | 9.37 | 4.70 |
| **2** | **1** | 254 | 3 | 28.50 | 49.74 | 3.51 | 62.03 | 45.08 | 0.68 | 7.48 | 6.80 | 1.90 |
| **2** | **2** | 68 | 2 | 8.50 | 70.67 | 1.33 | 51.39 | 75.12 | 0.34 | 2.48 | 2.14 | 0.30 |
| **3** | **1** | 223 | 4 | 23.50 | 54.94 | 3.40 | 63.30 | 42.19 | 0.72 | 6.98 | 6.26 | 1.40 |
| **4** | **1** | 308 | 6 | 28.50 | 39.34 | 3.37 | 34.26 | 162.68 | 0.13 | 8.47 | 8.34 | 3.30 |
| **4** | **2** | 23 | 5 | 8.50 | 56.16 | 0.36 | 17.38 | 417.76 | 0.02 | 0.74 | 0.72 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 490 | 1 | 44.50 | 42.21 | 5.75 | 73.78 | 21.99 | 1.45 | 12.84 | 11.39 | 4.30 |
| **2** | **1** | 304 | 3 | 28.50 | 57.65 | 4.87 | 74.25 | 21.22 | 1.39 | 9.62 | 8.23 | 1.80 |
| **2** | **2** | 81 | 2 | 8.50 | 79.92 | 1.80 | 61.22 | 47.02 | 0.59 | 3.14 | 2.55 | 0.30 |
| **3** | **1** | 266 | 4 | 23.50 | 64.12 | 4.74 | 75.50 | 19.20 | 1.47 | 9.00 | 7.53 | 1.30 |
| **4** | **1** | 367 | 6 | 28.50 | 40.45 | 4.12 | 40.83 | 120.45 | 0.20 | 10.27 | 10.07 | 3.60 |
| **4** | **2** | 28 | 5 | 8.50 | 57.36 | 0.45 | 21.16 | 325.30 | 0.04 | 0.91 | 0.87 | 0.10 |

## Traffic Stream Details (07:45-08:00)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 600 | 1 | 44.50 | 59.00 | 9.83 | 90.34 | -0.38 | 4.79 | 19.09 | 14.30 | 3.00 |
| **2** | **1** | 372 | 3 | 28.50 | 78.94 | 8.16 | 90.85 | -0.94 | 4.25 | 14.46 | 10.21 | 1.30 |
| **2** | **2** | 99 | 2 | 8.50 | 96.58 | 2.66 | 74.82 | 20.29 | 1.21 | 4.34 | 3.13 | 0.30 |
| **3** | **1** | 326 | 4 | 23.50 | 89.08 | 8.07 | 92.53 | -2.74 | 4.56 | 13.91 | 9.35 | 1.00 |
| **4** | **1** | 450 | 6 | 28.50 | 42.22 | 5.28 | 50.06 | 79.79 | 0.36 | 12.93 | 12.57 | 4.00 |
| **4** | **2** | 34 | 5 | 8.50 | 58.88 | 0.56 | 25.70 | 250.25 | 0.06 | 1.12 | 1.06 | 0.20 |

## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 600 | 1 | 44.50 | 64.68 | 10.78 | 90.34 | -0.38 | 5.22 | 19.52 | 14.30 | 2.90 |
| **2** | **1** | 372 | 3 | 28.50 | 89.37 | 9.24 | 90.85 | -0.94 | 4.80 | 15.02 | 10.21 | 1.30 |
| **2** | **2** | 99 | 2 | 8.50 | 103.04 | 2.83 | 74.82 | 20.29 | 1.29 | 4.42 | 3.13 | 0.30 |
| **3** | **1** | 326 | 4 | 23.50 | 104.14 | 9.43 | 92.53 | -2.74 | 5.33 | 14.68 | 9.35 | 1.00 |
| **4** | **1** | 450 | 6 | 28.50 | 42.24 | 5.28 | 50.06 | 79.79 | 0.36 | 12.93 | 12.57 | 4.00 |
| **4** | **2** | 34 | 5 | 8.50 | 58.94 | 0.56 | 25.70 | 250.25 | 0.06 | 1.12 | 1.06 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 490 | 1 | 44.50 | 45.02 | 6.13 | 73.78 | 21.99 | 1.60 | 12.99 | 11.39 | 4.30 |
| **2** | **1** | 304 | 3 | 28.50 | 64.68 | 5.46 | 74.25 | 21.22 | 1.63 | 9.86 | 8.23 | 1.80 |
| **2** | **2** | 81 | 2 | 8.50 | 86.95 | 1.96 | 61.22 | 47.02 | 0.71 | 3.26 | 2.55 | 0.30 |
| **3** | **1** | 266 | 4 | 23.50 | 75.73 | 5.60 | 75.50 | 19.20 | 1.79 | 9.32 | 7.53 | 1.30 |
| **4** | **1** | 367 | 6 | 28.50 | 40.47 | 4.13 | 40.83 | 120.45 | 0.20 | 10.27 | 10.07 | 3.60 |
| **4** | **2** | 28 | 5 | 8.50 | 57.45 | 0.45 | 21.16 | 325.30 | 0.04 | 0.91 | 0.87 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 410 | 1 | 44.50 | 36.83 | 4.19 | 61.73 | 45.79 | 0.73 | 10.10 | 9.37 | 4.70 |
| **2** | **1** | 254 | 3 | 28.50 | 51.15 | 3.61 | 62.03 | 45.08 | 0.73 | 7.53 | 6.80 | 1.90 |
| **2** | **2** | 68 | 2 | 8.50 | 74.51 | 1.41 | 51.39 | 75.12 | 0.38 | 2.52 | 2.14 | 0.30 |
| **3** | **1** | 223 | 4 | 23.50 | 57.14 | 3.54 | 63.30 | 42.19 | 0.79 | 7.04 | 6.26 | 1.40 |
| **4** | **1** | 308 | 6 | 28.50 | 39.36 | 3.37 | 34.26 | 162.68 | 0.13 | 8.47 | 8.34 | 3.30 |
| **4** | **2** | 23 | 5 | 8.50 | 56.24 | 0.36 | 17.38 | 417.76 | 0.02 | 0.74 | 0.72 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:48:19

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

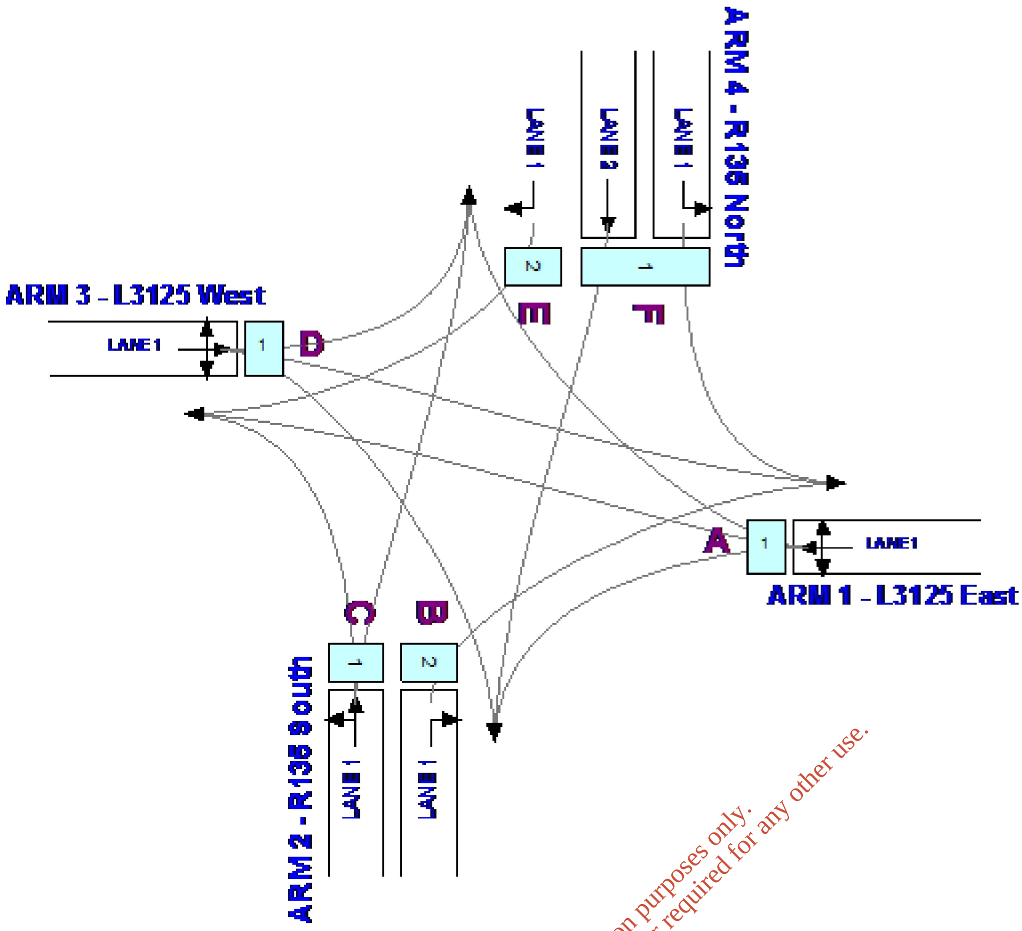
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

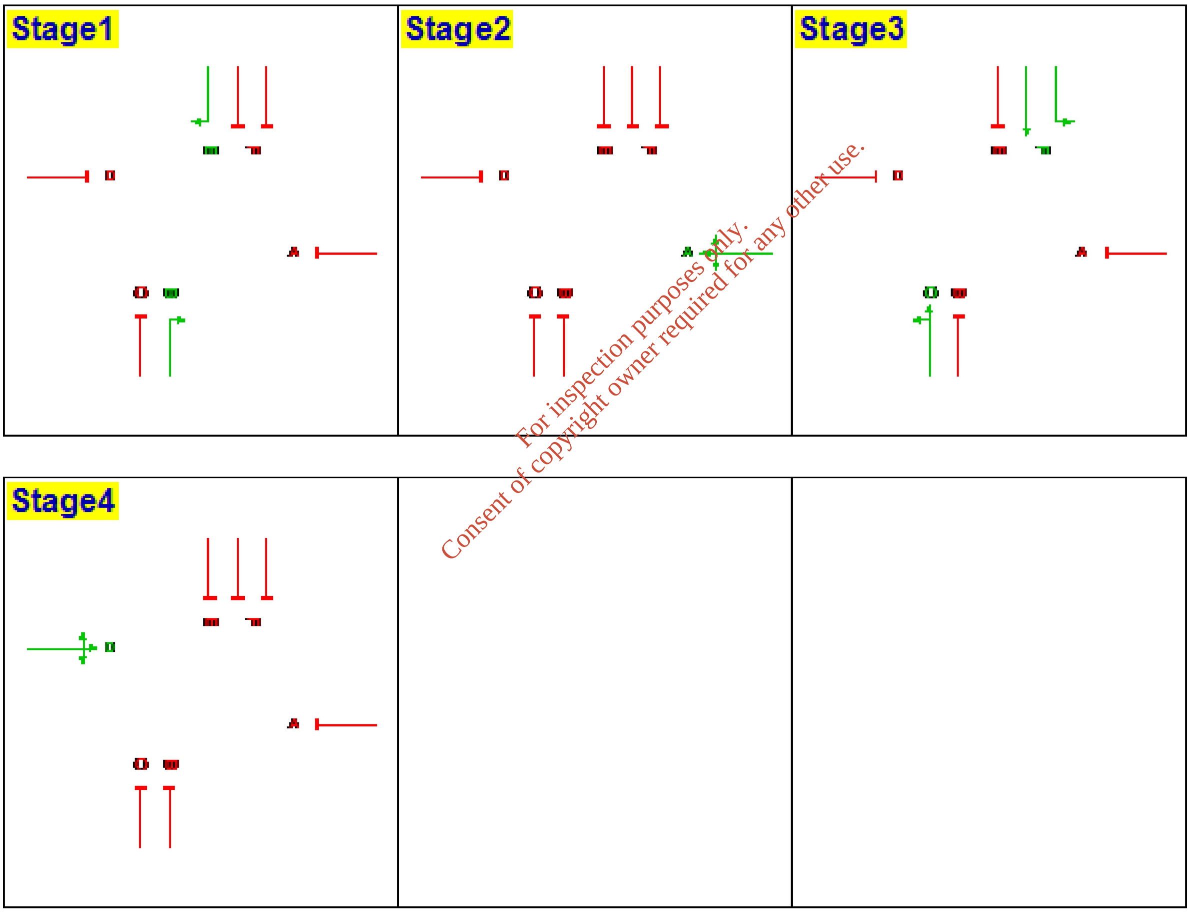
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | Yes | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set10 - 2022 AM Peak + Link

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 105 | 345 | 48 |
| | **Arm 2** | 92 | - | 234 | 81 |
| | **Arm 3** | 170 | 116 | - | 11 |
| | **Arm 4** | 122 | 144 | 31 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 374 | 446 | 546 | 546 | 446 | 374 |
| 2 - R135 South | 1 | C | 235 | 281 | 344 | 344 | 281 | 235 |
| 2 - R135 South | 2 | B | 70 | 84 | 103 | 103 | 84 | 70 |
| 3 - L3125 West | 1 | D | 223 | 266 | 326 | 326 | 266 | 223 |
| 4 - R135 North | 1 | F | 198 | 237 | 290 | 290 | 237 | 198 |
| 4 - R135 North | 2 | E | 22 | 27 | 33 | 33 | 27 | 22 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 21 | 69 | 10 |
| 2 - R135 South | 57 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 41 | 48 | 10 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 25.47 | 19.32 | 19.32 | 63.8 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | 4.56 | 20.53 | 20.53 | 61.60 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

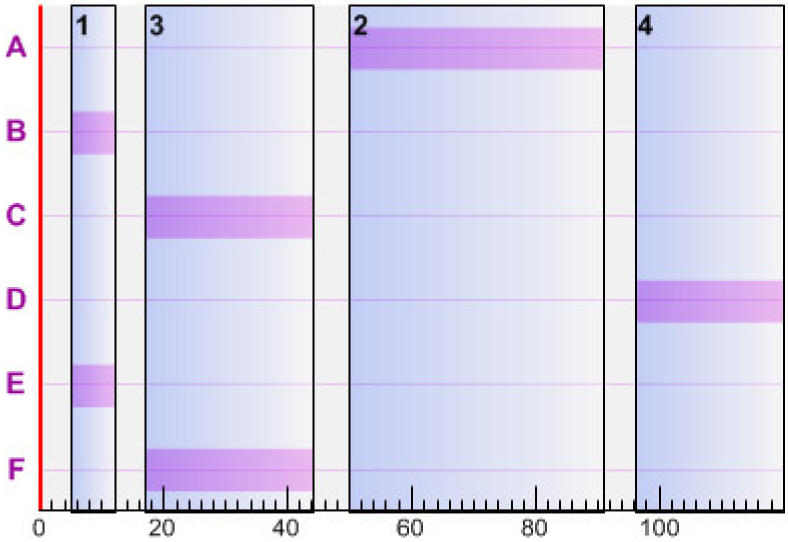
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 27.0 | 44.0 |
| 2 | 50.0 | 41.0 | 91.0 |
| 4 | 96.0 | 24.0 | 0.0 |



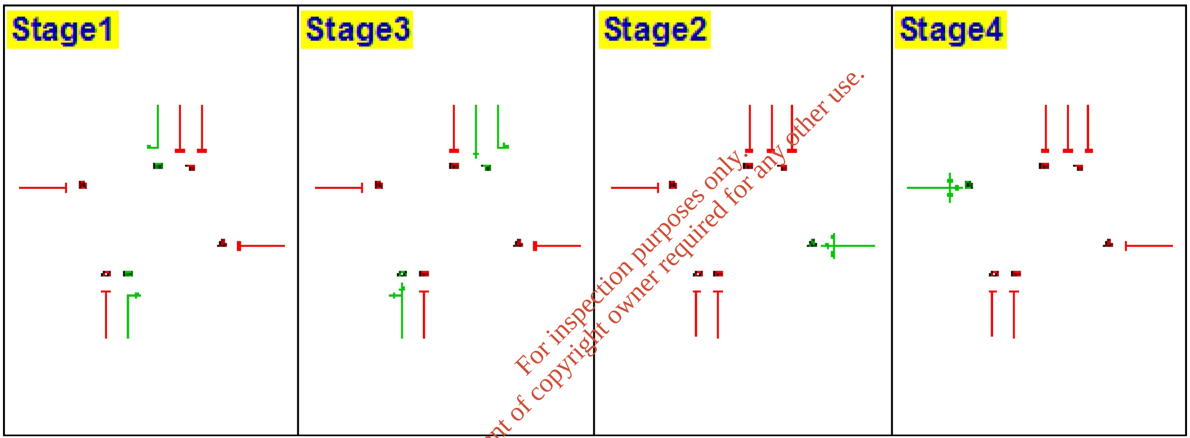
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 50 | 41.0 | 91 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 27.0 | 44 | | | | | | |
| **D** | 96 | 24.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 27.0 | 44 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 455 | A | 42.50 | 42.91 | 5.42 | 71.73 | 25.47 | 1.31 | 12.09 | 10.78 | 24.20 |
| **2** | **1** | 287 | C | 28.50 | 55.16 | 4.40 | 70.09 | 28.40 | 1.14 | 8.88 | 7.74 | 11.00 |
| **2** | **2** | 86 | B | 8.50 | 86.16 | 2.06 | 65.00 | 38.47 | 0.79 | 3.50 | 2.71 | 1.80 |
| **3** | **1** | 272 | D | 25.50 | 58.79 | 4.44 | 71.15 | 26.49 | 1.21 | 8.76 | 7.55 | 9.40 |
| **4** | **1** | 242 | F | 28.50 | 38.24 | 2.57 | 26.92 | 234.32 | 0.07 | 6.53 | 6.46 | 16.60 |
| **4** | **2** | 27 | E | 8.50 | 57.15 | 0.43 | 20.41 | 341.06 | 0.03 | 0.88 | 0.84 | 0.80 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 374 | 1 | 42.50 | 36.80 | 3.82 | 58.96 | 52.64 | 0.59 | 9.29 | 8.70 | 4.20 |
| **2** | **1** | 235 | 3 | 28.50 | 47.79 | 3.12 | 57.39 | 56.81 | 0.52 | 6.79 | 6.27 | 1.90 |
| **2** | **2** | 70 | 2 | 8.50 | 71.63 | 1.39 | 52.90 | 70.12 | 0.37 | 2.57 | 2.20 | 0.30 |
| **3** | **1** | 223 | 4 | 25.50 | 50.65 | 3.14 | 58.33 | 54.29 | 0.55 | 6.67 | 6.13 | 1.60 |
| **4** | **1** | 198 | 6 | 28.50 | 37.55 | 2.07 | 22.03 | 308.61 | 0.04 | 5.28 | 5.24 | 2.40 |
| **4** | **2** | 22 | 5 | 8.50 | 55.94 | 0.34 | 16.63 | 441.30 | 0.02 | 0.71 | 0.68 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 446 | 1 | 42.50 | 41.82 | 5.18 | 70.31 | 28.00 | 1.16 | 11.70 | 10.54 | 4.10 |
| **2** | **1** | 281 | 3 | 28.50 | 53.66 | 4.19 | 68.63 | 31.14 | 0.99 | 8.56 | 7.57 | 1.90 |
| **2** | **2** | 84 | 2 | 8.50 | 82.11 | 1.92 | 63.48 | 41.77 | 0.67 | 3.31 | 2.65 | 0.30 |
| **3** | **1** | 266 | 4 | 25.50 | 56.98 | 4.21 | 69.58 | 29.35 | 1.04 | 8.42 | 7.37 | 1.60 |
| **4** | **1** | 237 | 6 | 28.50 | 38.16 | 2.51 | 26.36 | 241.37 | 0.07 | 6.39 | 6.32 | 2.70 |
| **4** | **2** | 27 | 5 | 8.50 | 57.12 | 0.43 | 20.41 | 341.06 | 0.03 | 0.88 | 0.84 | 0.10 |

## Traffic Stream Details (07:45-08:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 546 | 1 | 42.50 | 54.72 | 8.30 | 86.08 | 4.56 | 3.34 | 16.54 | 13.20 | 3.10 |
| **2** | **1** | 344 | 3 | 28.50 | 67.74 | 6.47 | 84.02 | 7.12 | 2.60 | 11.99 | 9.39 | 1.60 |
| **2** | **2** | 103 | 2 | 8.50 | 101.40 | 2.90 | 77.84 | 15.62 | 1.42 | 4.68 | 3.26 | 0.30 |
| **3** | **1** | 326 | 4 | 25.50 | 72.67 | 6.58 | 85.28 | 5.54 | 2.79 | 11.94 | 9.15 | 1.30 |
| **4** | **1** | 290 | 6 | 28.50 | 39.03 | 3.14 | 32.26 | 178.98 | 0.11 | 7.93 | 7.82 | 3.20 |
| **4** | **2** | 33 | 5 | 8.50 | 58.62 | 0.54 | 24.94 | 260.86 | 0.05 | 1.08 | 1.03 | 0.20 |



## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 546 | 1 | 42.50 | 57.65 | 8.74 | 86.08 | 4.56 | 3.52 | 16.71 | 13.20 | 3.10 |
| **2** | **1** | 344 | 3 | 28.50 | 71.71 | 6.85 | 84.02 | 7.12 | 2.75 | 12.14 | 9.39 | 1.50 |
| **2** | **2** | 103 | 2 | 8.50 | 110.15 | 3.15 | 77.84 | 15.62 | 1.54 | 4.80 | 3.26 | 0.30 |
| **3** | **1** | 326 | 4 | 25.50 | 77.85 | 7.05 | 85.28 | 5.54 | 2.99 | 12.14 | 9.15 | 1.30 |
| **4** | **1** | 290 | 6 | 28.50 | 39.04 | 3.14 | 32.26 | 178.98 | 0.11 | 7.93 | 7.82 | 3.20 |
| **4** | **2** | 33 | 5 | 8.50 | 58.68 | 0.54 | 24.94 | 260.86 | 0.05 | 1.08 | 1.03 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 446 | 1 | 42.50 | 43.40 | 5.38 | 70.31 | 28.00 | 1.26 | 11.80 | 10.54 | 4.10 |
| **2** | **1** | 281 | 3 | 28.50 | 56.33 | 4.40 | 68.63 | 31.14 | 1.11 | 8.67 | 7.57 | 1.80 |
| **2** | **2** | 84 | 2 | 8.50 | 91.58 | 2.14 | 63.48 | 41.77 | 0.82 | 3.47 | 2.65 | 0.30 |
| **3** | **1** | 266 | 4 | 25.50 | 60.51 | 4.47 | 69.58 | 29.35 | 1.18 | 8.55 | 7.37 | 1.60 |
| **4** | **1** | 237 | 6 | 28.50 | 38.16 | 2.51 | 26.36 | 241.37 | 0.07 | 6.39 | 6.32 | 2.70 |
| **4** | **2** | 27 | 5 | 8.50 | 57.21 | 0.43 | 20.41 | 341.06 | 0.04 | 0.88 | 0.84 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 374 | 1 | 42.50 | 37.20 | 3.86 | 58.96 | 52.64 | 0.62 | 9.32 | 8.70 | 4.20 |
| **2** | **1** | 235 | 3 | 28.50 | 48.59 | 3.17 | 57.39 | 56.81 | 0.55 | 6.82 | 6.27 | 1.90 |
| **2** | **2** | 70 | 2 | 8.50 | 76.22 | 1.48 | 52.90 | 70.12 | 0.42 | 2.62 | 2.20 | 0.30 |
| **3** | **1** | 223 | 4 | 25.50 | 51.66 | 3.20 | 58.33 | 54.29 | 0.58 | 6.71 | 6.13 | 1.60 |
| **4** | **1** | 198 | 6 | 28.50 | 37.56 | 2.07 | 22.03 | 308.61 | 0.04 | 5.28 | 5.24 | 2.40 |
| **4** | **2** | 22 | 5 | 8.50 | 56.02 | 0.34 | 16.63 | 441.30 | 0.02 | 0.71 | 0.68 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads AM.osc
**Report generation date:** 09/12/2016 11:15:46

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

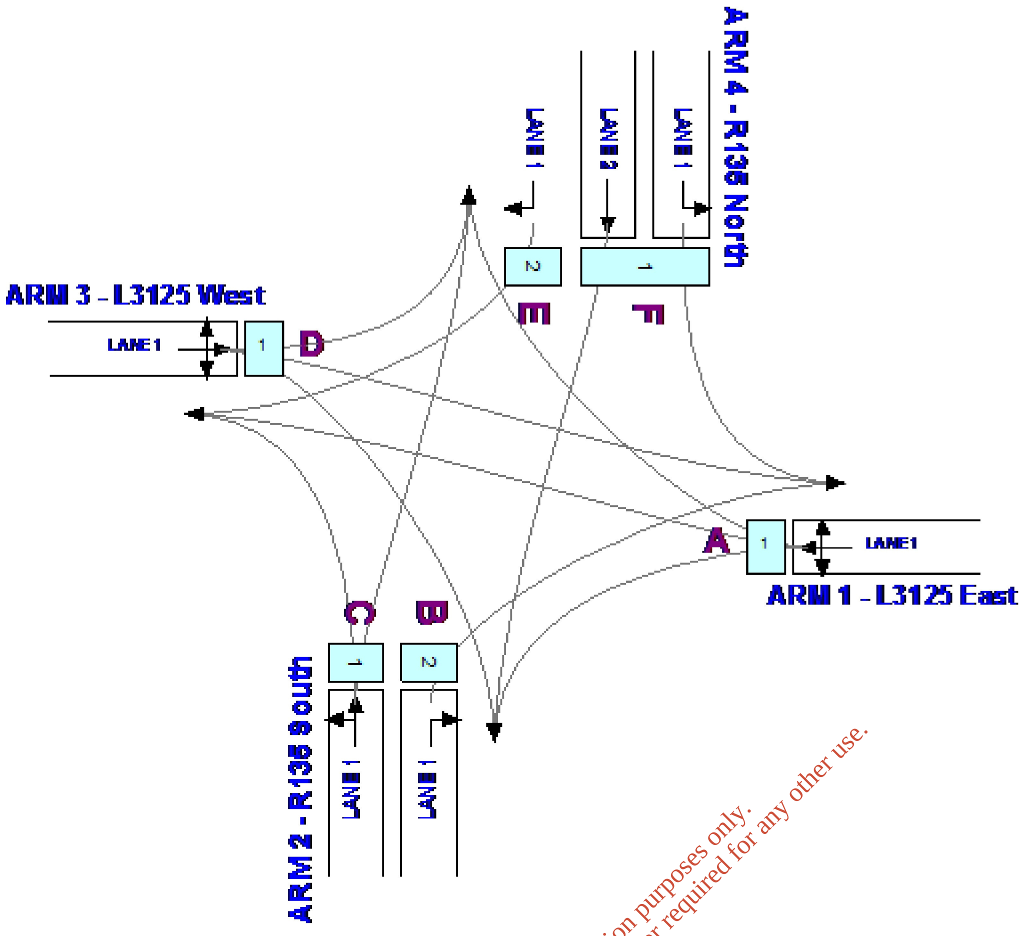
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram




# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |



## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

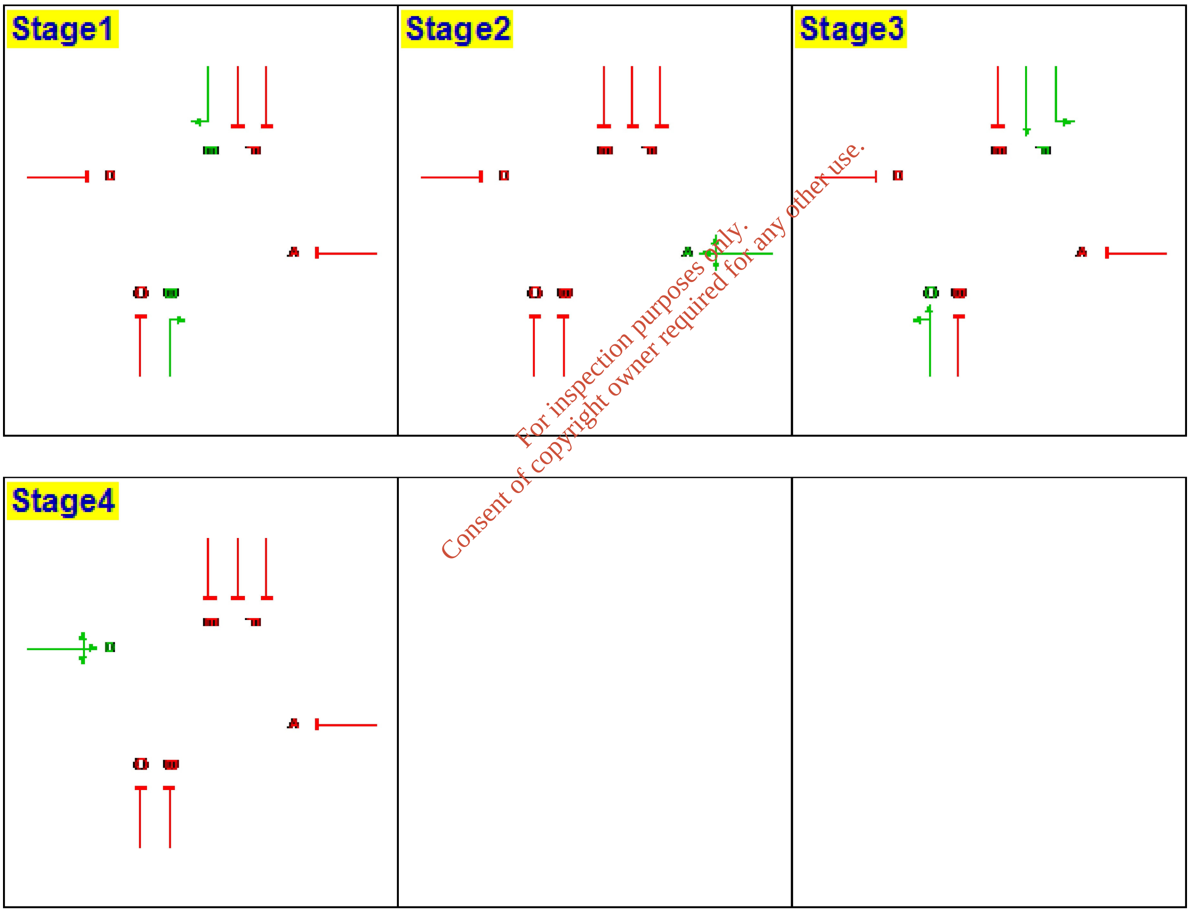
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |



## Demand Set7 - 2032 AM Peak No Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 110 | 359 | 101 |
| | **Arm 2** | 96 | - | 243 | 84 |
| | **Arm 3** | 177 | 121 | - | 12 |
| | **Arm 4** | 254 | 149 | 33 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 428 | 510 | 625 | 625 | 510 | 428 |
| 2 - R135 South | 1 | C | 244 | 292 | 357 | 357 | 292 | 244 |
| 2 - R135 South | 2 | B | 73 | 87 | 107 | 107 | 87 | 73 |
| 3 - L3125 West | 1 | D | 233 | 278 | 340 | 340 | 278 | 233 |
| 4 - R135 North | 1 | F | 301 | 359 | 440 | 440 | 359 | 301 |
| 4 - R135 North | 2 | E | 26 | 31 | 38 | 38 | 31 | 26 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 57 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 58 | 34 | 8 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 14.98 | 24.07 | 24.07 | 66.2 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -4.02 | 26.70 | 26.70 | 63.10 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

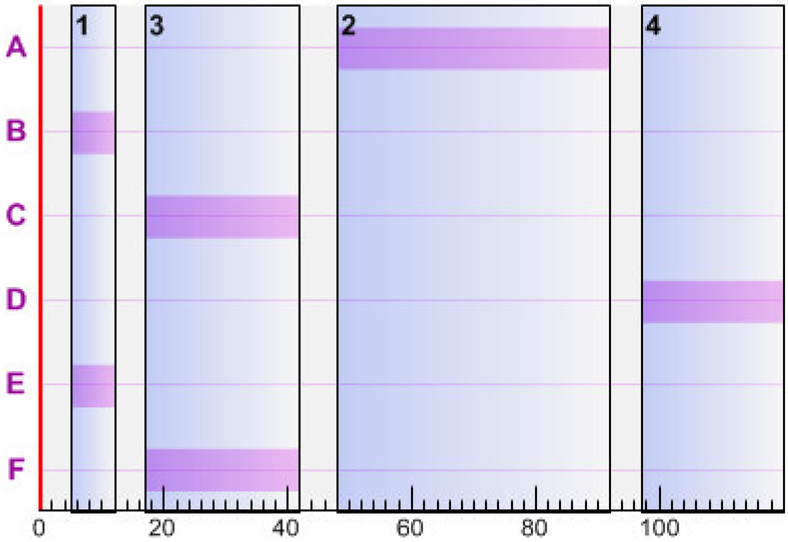
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 25.0 | 42.0 |
| 2 | 48.0 | 44.0 | 92.0 |
| 4 | 97.0 | 23.0 | 0.0 |



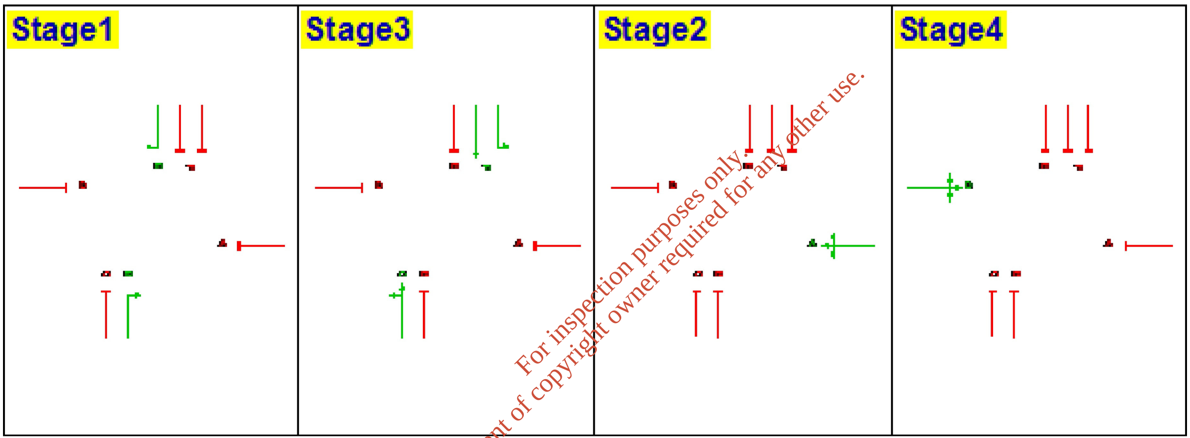
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 48 | 44.0 | 92 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 25.0 | 42 | | | | | | |
| **D** | 97 | 23.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 25.0 | 42 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 521 | A | 45.50 | 43.89 | 6.35 | 76.72 | 17.31 | 1.84 | 13.88 | 12.04 | 26.30 |
| **2** | **1** | 298 | C | 26.50 | 65.55 | 5.43 | 78.27 | 14.98 | 1.93 | 10.16 | 8.23 | 9.00 |
| **2** | **2** | 89 | B | 8.50 | 89.40 | 2.21 | 67.26 | 33.80 | 0.90 | 3.71 | 2.81 | 1.80 |
| **3** | **1** | 284 | D | 24.50 | 66.27 | 5.23 | 77.32 | 16.40 | 1.81 | 9.79 | 7.99 | 8.40 |
| **4** | **1** | 367 | F | 26.50 | 42.56 | 4.34 | 43.91 | 104.98 | 0.24 | 10.53 | 10.29 | 19.80 |
| **4** | **2** | 32 | E | 8.50 | 58.40 | 0.52 | 24.18 | 272.14 | 0.05 | 1.05 | 1.00 | 0.90 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 428 | 1 | 45.50 | 36.08 | 4.29 | 63.03 | 42.80 | 0.76 | 10.44 | 9.69 | 4.90 |
| **2** | **1** | 244 | 3 | 26.50 | 52.65 | 3.57 | 64.09 | 40.43 | 0.76 | 7.42 | 6.66 | 1.60 |
| **2** | **2** | 73 | 2 | 8.50 | 73.15 | 1.48 | 55.17 | 63.13 | 0.42 | 2.72 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 24.50 | 53.96 | 3.49 | 63.44 | 41.87 | 0.73 | 7.21 | 6.48 | 1.50 |
| **4** | **1** | 301 | 6 | 26.50 | 41.16 | 3.44 | 36.01 | 149.92 | 0.14 | 8.46 | 8.32 | 3.00 |
| **4** | **2** | 26 | 5 | 8.50 | 56.83 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 510 | 1 | 45.50 | 42.27 | 5.99 | 75.10 | 19.84 | 1.58 | 13.33 | 11.75 | 4.50 |
| **2** | **1** | 292 | 3 | 26.50 | 62.13 | 5.04 | 76.70 | 17.34 | 1.60 | 9.65 | 8.05 | 1.50 |
| **2** | **2** | 87 | 2 | 8.50 | 84.70 | 2.05 | 65.75 | 36.88 | 0.75 | 3.49 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 24.50 | 62.98 | 4.86 | 75.69 | 18.91 | 1.49 | 9.30 | 7.81 | 1.40 |
| **4** | **1** | 359 | 6 | 26.50 | 42.37 | 4.23 | 42.95 | 109.55 | 0.23 | 10.27 | 10.05 | 3.30 |
| **4** | **2** | 31 | 5 | 8.50 | 58.11 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (07:45-08:00)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 625 | 1 | 45.50 | 60.99 | 10.59 | 92.04 | -2.21 | 5.60 | 20.38 | 14.78 | 2.90 |
| **2** | **1** | 357 | 3 | 26.50 | 88.19 | 8.75 | 93.77 | -4.02 | 5.16 | 15.15 | 9.99 | 1.10 |
| **2** | **2** | 107 | 2 | 8.50 | 106.90 | 3.18 | 80.87 | 11.29 | 1.67 | 5.06 | 3.39 | 0.30 |
| **3** | **1** | 340 | 4 | 24.50 | 87.51 | 8.27 | 92.57 | -2.77 | 4.65 | 14.33 | 9.68 | 1.10 |
| **4** | **1** | 440 | 6 | 26.50 | 44.34 | 5.42 | 52.64 | 70.97 | 0.42 | 12.95 | 12.53 | 3.50 |
| **4** | **2** | 38 | 5 | 8.50 | 59.98 | 0.63 | 28.72 | 213.38 | 0.08 | 1.26 | 1.19 | 0.20 |

## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 625 | 1 | 45.50 | 68.46 | 11.89 | 92.04 | -2.21 | 6.24 | 21.02 | 14.78 | 2.80 |
| **2** | **1** | 357 | 3 | 26.50 | 104.71 | 10.38 | 93.77 | -4.02 | 6.12 | 16.11 | 9.99 | 1.10 |
| **2** | **2** | 107 | 2 | 8.50 | 118.29 | 3.52 | 80.87 | 11.29 | 1.84 | 5.22 | 3.39 | 0.30 |
| **3** | **1** | 340 | 4 | 24.50 | 102.06 | 9.64 | 92.57 | -2.77 | 5.42 | 15.10 | 9.68 | 1.00 |
| **4** | **1** | 440 | 6 | 26.50 | 44.37 | 5.42 | 52.64 | 70.97 | 0.42 | 12.95 | 12.53 | 3.50 |
| **4** | **2** | 38 | 5 | 8.50 | 60.09 | 0.63 | 28.72 | 213.38 | 0.08 | 1.26 | 1.19 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 510 | 1 | 45.50 | 45.87 | 6.50 | 75.10 | 19.84 | 1.76 | 13.51 | 11.75 | 4.40 |
| **2** | **1** | 292 | 3 | 26.50 | 74.91 | 6.08 | 76.70 | 17.34 | 1.96 | 10.02 | 8.05 | 1.50 |
| **2** | **2** | 87 | 2 | 8.50 | 97.18 | 2.35 | 65.75 | 36.88 | 0.95 | 3.69 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 24.50 | 74.00 | 5.71 | 75.69 | 18.91 | 1.82 | 9.62 | 7.81 | 1.40 |
| **4** | **1** | 359 | 6 | 26.50 | 42.40 | 4.23 | 42.95 | 109.55 | 0.23 | 10.28 | 10.05 | 3.30 |
| **4** | **2** | 31 | 5 | 8.50 | 58.24 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 428 | 1 | 45.50 | 36.65 | 4.36 | 63.03 | 42.80 | 0.79 | 10.48 | 9.69 | 4.90 |
| **2** | **1** | 244 | 3 | 26.50 | 54.80 | 3.71 | 64.09 | 40.43 | 0.83 | 7.49 | 6.66 | 1.60 |
| **2** | **2** | 73 | 2 | 8.50 | 78.86 | 1.60 | 55.17 | 63.13 | 0.49 | 2.78 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 24.50 | 56.03 | 3.63 | 63.44 | 41.87 | 0.80 | 7.28 | 6.48 | 1.50 |
| **4** | **1** | 301 | 6 | 26.50 | 41.18 | 3.44 | 36.01 | 149.92 | 0.14 | 8.46 | 8.32 | 3.00 |
| **4** | **2** | 26 | 5 | 8.50 | 56.95 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:46:52

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

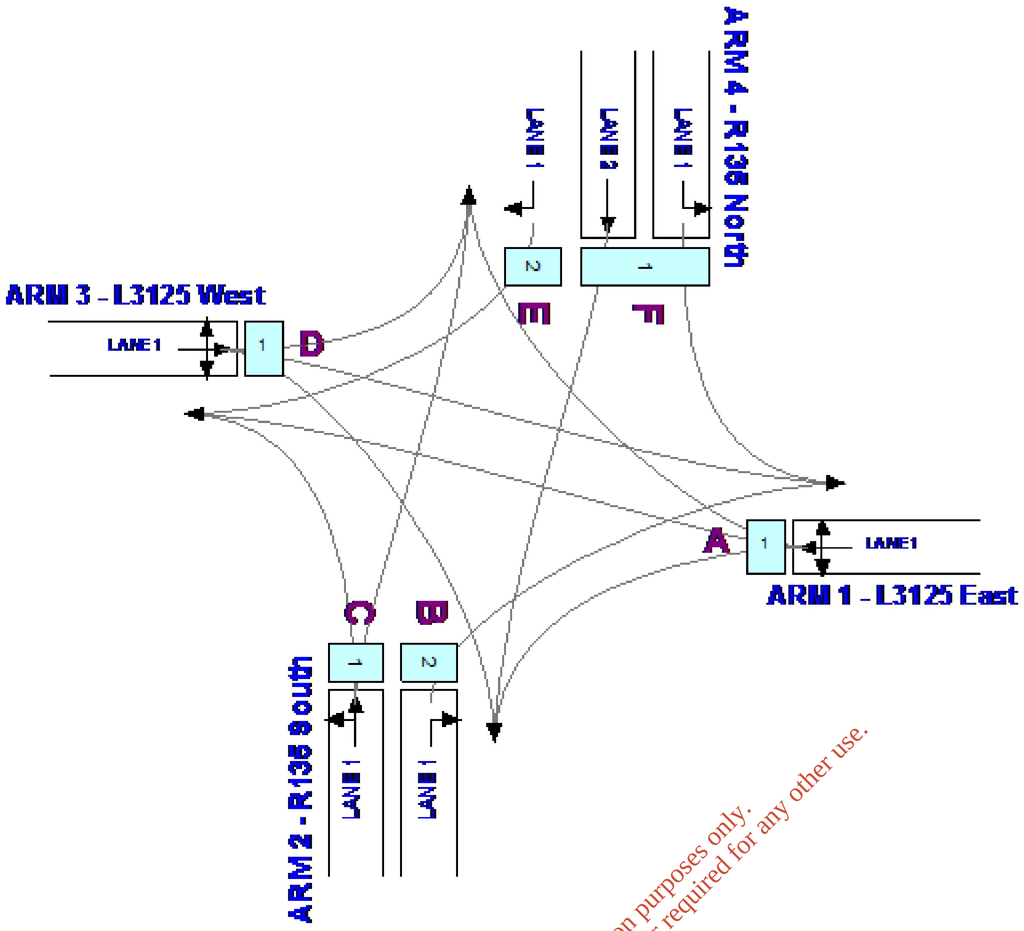
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram




# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

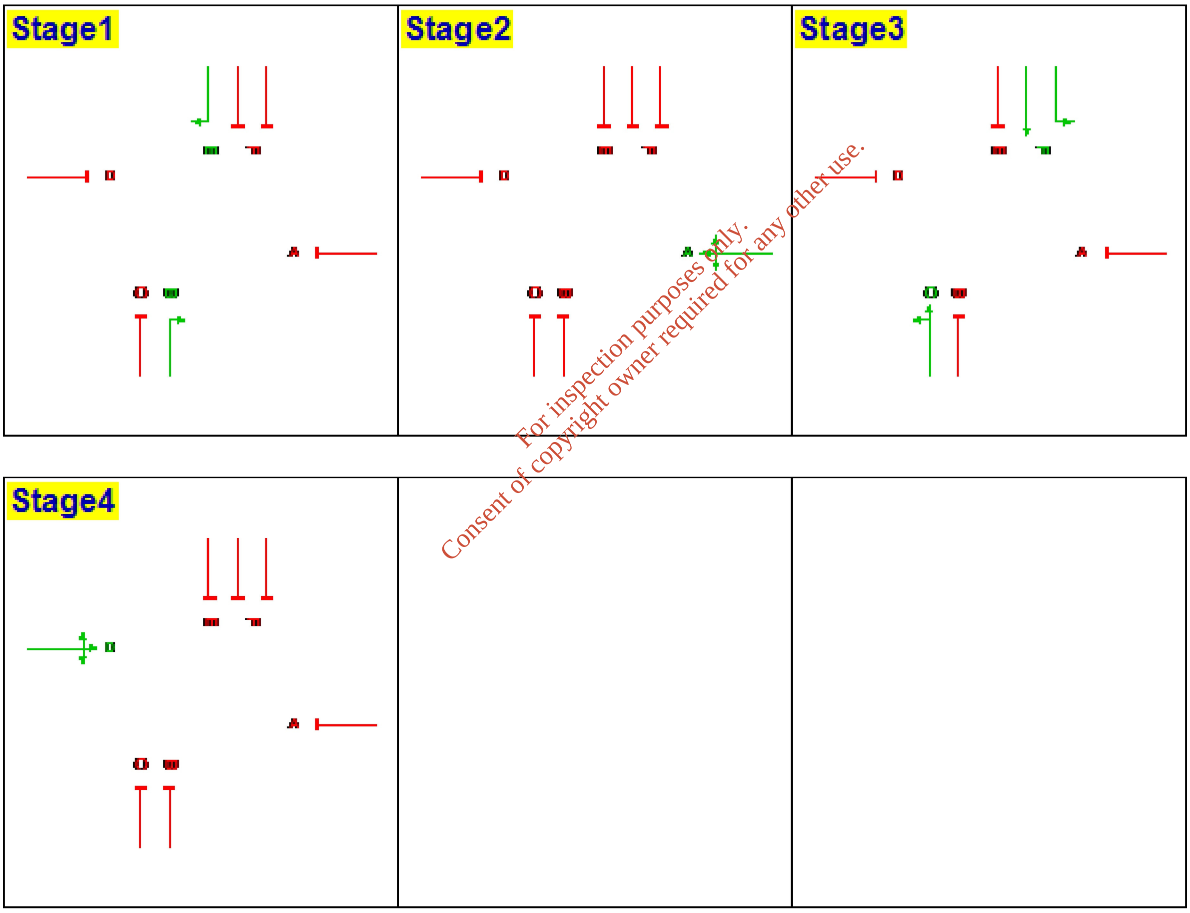
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:**Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set8 - 2032 AM Peak With Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 110 | 359 | 101 |
| | **Arm 2** | 96 | - | 243 | 85 |
| | **Arm 3** | 177 | 121 | - | 12 |
| | **Arm 4** | 254 | 150 | 33 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 428 | 510 | 625 | 625 | 510 | 428 |
| 2 - R135 South | 1 | C | 245 | 292 | 358 | 358 | 292 | 245 |
| 2 - R135 South | 2 | B | 73 | 87 | 107 | 107 | 87 | 73 |
| 3 - L3125 West | 1 | D | 233 | 278 | 340 | 340 | 278 | 233 |
| 4 - R135 North | 1 | F | 302 | 360 | 441 | 441 | 360 | 302 |
| 4 - R135 North | 2 | E | 26 | 31 | 38 | 38 | 31 | 26 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 57 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 58 | 34 | 8 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 14.98 | 24.09 | 24.09 | 66.3 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -4.29 | 26.76 | 26.76 | 63.30 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

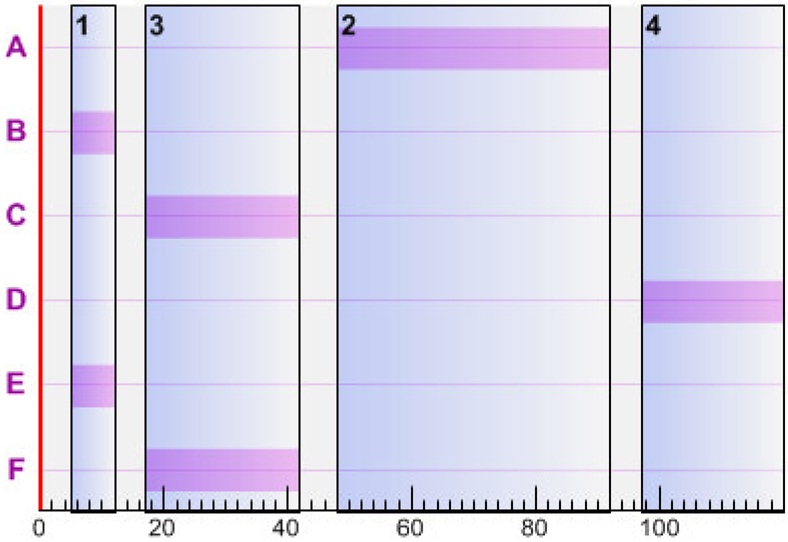
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 25.0 | 42.0 |
| 2 | 48.0 | 44.0 | 92.0 |
| 4 | 97.0 | 23.0 | 0.0 |



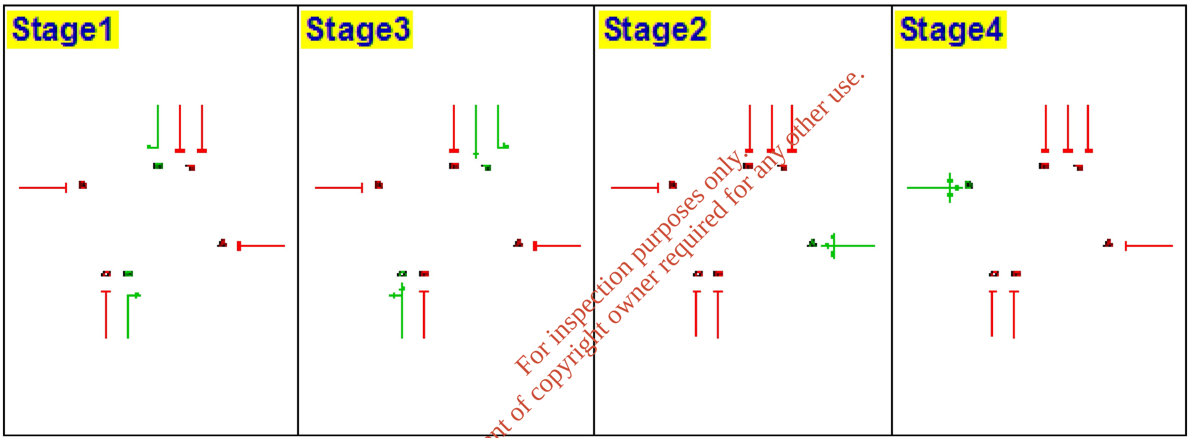
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 48 | 44.0 | 92 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 25.0 | 42 | | | | | | |
| **D** | 97 | 23.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 25.0 | 42 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 521 | A | 45.50 | 43.89 | 6.35 | 76.72 | 17.31 | 1.84 | 13.88 | 12.04 | 26.30 |
| **2** | **1** | 298 | C | 26.50 | 65.55 | 5.43 | 78.27 | 14.98 | 1.93 | 10.16 | 8.23 | 9.00 |
| **2** | **2** | 89 | B | 8.50 | 89.40 | 2.21 | 67.26 | 33.80 | 0.90 | 3.71 | 2.81 | 1.80 |
| **3** | **1** | 284 | D | 24.50 | 66.27 | 5.23 | 77.32 | 16.40 | 1.81 | 9.79 | 7.99 | 8.40 |
| **4** | **1** | 368 | F | 26.50 | 42.58 | 4.35 | 44.03 | 104.42 | 0.25 | 10.56 | 10.32 | 19.90 |
| **4** | **2** | 32 | E | 8.50 | 58.40 | 0.52 | 24.18 | 272.14 | 0.05 | 1.05 | 1.00 | 0.90 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 428 | 1 | 45.50 | 36.08 | 4.29 | 63.03 | 42.80 | 0.76 | 10.44 | 9.69 | 4.90 |
| **2** | **1** | 245 | 3 | 26.50 | 52.79 | 3.59 | 64.35 | 39.86 | 0.77 | 7.46 | 6.69 | 1.60 |
| **2** | **2** | 73 | 2 | 8.50 | 73.15 | 1.48 | 55.17 | 63.13 | 0.42 | 2.72 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 24.50 | 53.96 | 3.49 | 63.44 | 41.87 | 0.73 | 7.21 | 6.48 | 1.50 |
| **4** | **1** | 302 | 6 | 26.50 | 41.18 | 3.45 | 36.13 | 149.10 | 0.14 | 8.49 | 8.35 | 3.00 |
| **4** | **2** | 26 | 5 | 8.50 | 56.83 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 510 | 1 | 45.50 | 42.27 | 5.99 | 75.10 | 19.84 | 1.58 | 13.33 | 11.75 | 4.50 |
| **2** | **1** | 292 | 3 | 26.50 | 62.15 | 5.04 | 76.70 | 17.34 | 1.60 | 9.65 | 8.05 | 1.50 |
| **2** | **2** | 87 | 2 | 8.50 | 84.70 | 2.05 | 65.75 | 36.88 | 0.75 | 3.49 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 24.50 | 62.98 | 4.86 | 75.69 | 18.91 | 1.49 | 9.30 | 7.81 | 1.40 |
| **4** | **1** | 360 | 6 | 26.50 | 42.39 | 4.24 | 43.07 | 108.96 | 0.23 | 10.31 | 10.08 | 3.30 |
| **4** | **2** | 31 | 5 | 8.50 | 58.11 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (07:45-08:00)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 625 | 1 | 45.50 | 60.99 | 10.59 | 92.04 | -2.21 | 5.60 | 20.38 | 14.78 | 2.90 |
| **2** | **1** | 358 | 3 | 26.50 | 88.71 | 8.82 | 94.03 | -4.29 | 5.26 | 15.28 | 10.02 | 1.10 |
| **2** | **2** | 107 | 2 | 8.50 | 106.90 | 3.18 | 80.87 | 11.29 | 1.67 | 5.06 | 3.39 | 0.30 |
| **3** | **1** | 340 | 4 | 24.50 | 87.51 | 8.27 | 92.57 | -2.77 | 4.65 | 14.33 | 9.68 | 1.10 |
| **4** | **1** | 441 | 6 | 26.50 | 44.37 | 5.44 | 52.76 | 70.58 | 0.42 | 12.98 | 12.56 | 3.60 |
| **4** | **2** | 38 | 5 | 8.50 | 59.98 | 0.63 | 28.72 | 213.38 | 0.08 | 1.26 | 1.19 | 0.20 |

## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 625 | 1 | 45.50 | 68.46 | 11.89 | 92.04 | -2.21 | 6.24 | 21.02 | 14.78 | 2.80 |
| **2** | **1** | 358 | 3 | 26.50 | 105.85 | 10.53 | 94.03 | -4.29 | 6.27 | 16.29 | 10.02 | 1.10 |
| **2** | **2** | 107 | 2 | 8.50 | 118.29 | 3.52 | 80.87 | 11.29 | 1.84 | 5.22 | 3.39 | 0.30 |
| **3** | **1** | 340 | 4 | 24.50 | 102.06 | 9.64 | 92.57 | -2.77 | 5.42 | 15.10 | 9.68 | 1.00 |
| **4** | **1** | 441 | 6 | 26.50 | 44.40 | 5.44 | 52.76 | 70.58 | 0.42 | 12.98 | 12.56 | 3.60 |
| **4** | **2** | 38 | 5 | 8.50 | 60.09 | 0.63 | 28.72 | 213.38 | 0.08 | 1.26 | 1.19 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 510 | 1 | 45.50 | 45.87 | 6.50 | 75.10 | 19.84 | 1.76 | 13.51 | 11.75 | 4.40 |
| **2** | **1** | 292 | 3 | 26.50 | 75.39 | 6.12 | 76.70 | 17.34 | 1.96 | 10.02 | 8.05 | 1.50 |
| **2** | **2** | 87 | 2 | 8.50 | 97.18 | 2.35 | 65.75 | 36.88 | 0.95 | 3.69 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 24.50 | 74.00 | 5.71 | 75.69 | 18.91 | 1.82 | 9.62 | 7.81 | 1.40 |
| **4** | **1** | 360 | 6 | 26.50 | 42.42 | 4.24 | 43.07 | 108.96 | 0.23 | 10.31 | 10.08 | 3.30 |
| **4** | **2** | 31 | 5 | 8.50 | 58.24 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 428 | 1 | 45.50 | 36.65 | 4.36 | 63.03 | 42.80 | 0.79 | 10.48 | 9.69 | 4.90 |
| **2** | **1** | 245 | 3 | 26.50 | 54.96 | 3.74 | 64.35 | 39.86 | 0.84 | 7.53 | 6.69 | 1.60 |
| **2** | **2** | 73 | 2 | 8.50 | 78.86 | 1.60 | 55.17 | 63.13 | 0.49 | 2.78 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 24.50 | 56.03 | 3.63 | 63.44 | 41.87 | 0.80 | 7.28 | 6.48 | 1.50 |
| **4** | **1** | 302 | 6 | 26.50 | 41.20 | 3.46 | 36.13 | 149.10 | 0.14 | 8.49 | 8.35 | 3.00 |
| **4** | **2** | 26 | 5 | 8.50 | 56.95 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:47:41

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

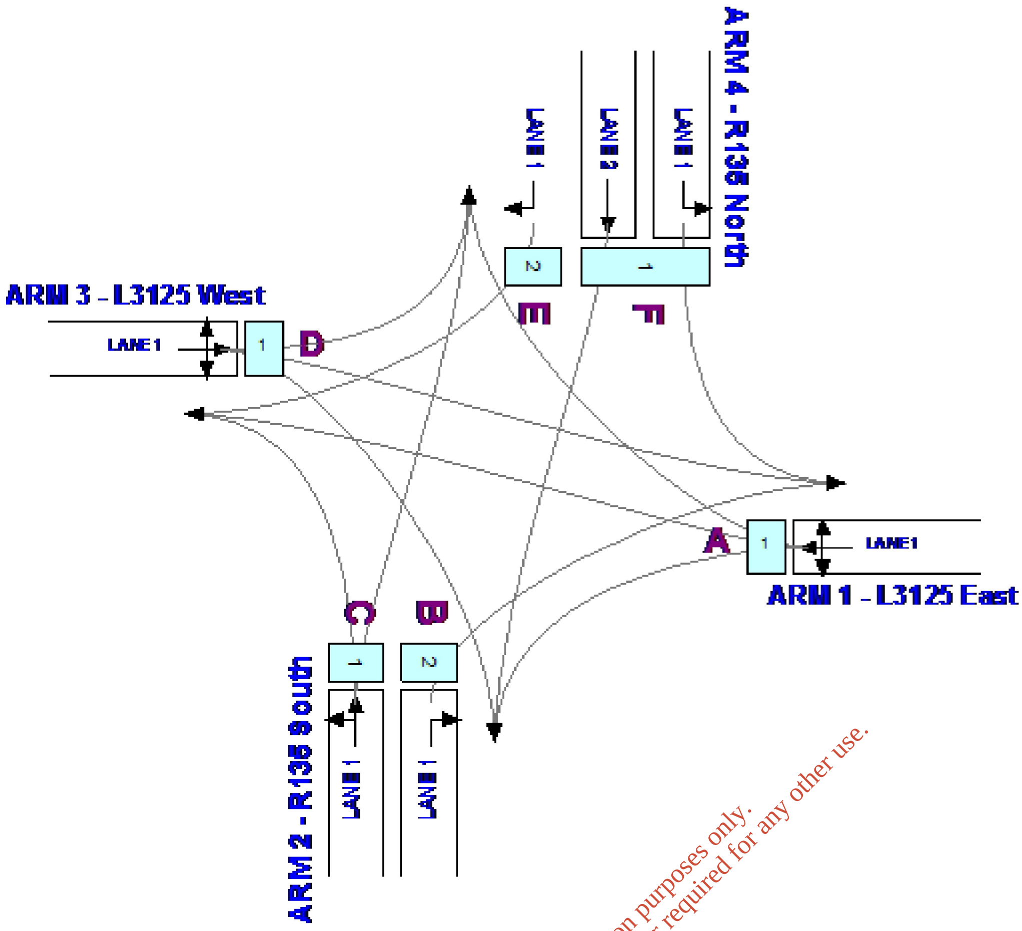
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

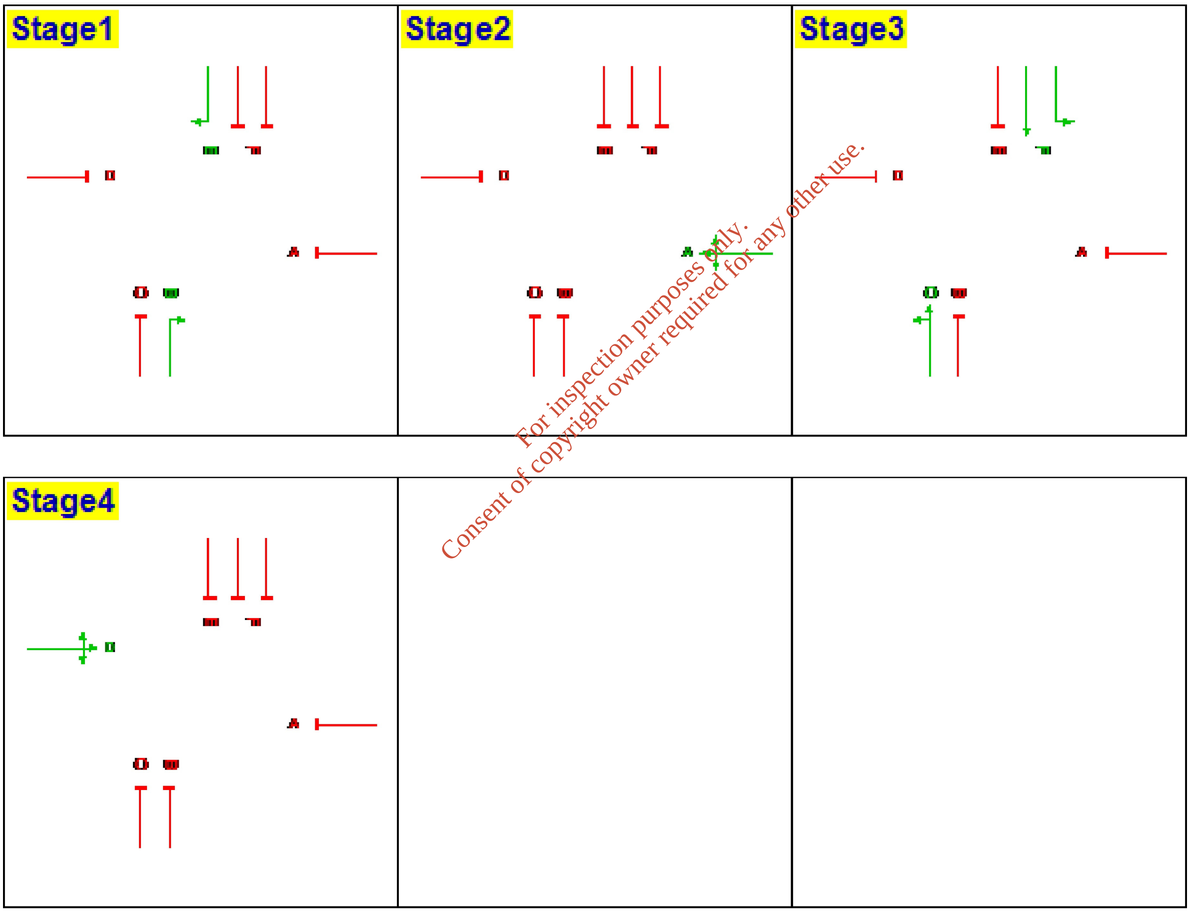
## Intergreen Matrix

| | To | | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | Yes | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak + Link | No | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set9 - 2032 AM Peak Sensitivity

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 110 | 359 | 101 |
| | **Arm 2** | 96 | - | 243 | 101 |
| | **Arm 3** | 177 | 121 | - | 12 |
| | **Arm 4** | 254 | 166 | 33 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 428 | 510 | 625 | 625 | 510 | 428 |
| 2 - R135 South | 1 | C | 257 | 307 | 376 | 376 | 307 | 257 |
| 2 - R135 South | 2 | B | 73 | 87 | 106 | 106 | 87 | 73 |
| 3 - L3125 West | 1 | D | 233 | 278 | 340 | 340 | 278 | 233 |
| 4 - R135 North | 1 | F | 316 | 377 | 462 | 462 | 377 | 316 |
| 4 - R135 North | 2 | E | 24 | 28 | 35 | 35 | 28 | 24 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 19 | 63 | 18 |
| 2 - R135 South | 55 | 23 | 22 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 56 | 37 | 7 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 13.60 | 24.75 | 24.75 | 66.5 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -5.43 | 27.80 | 27.80 | 62.90 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

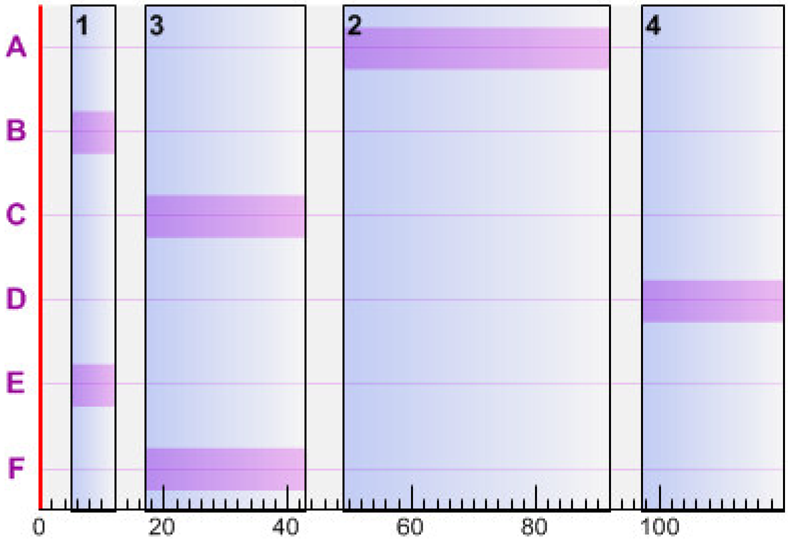
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 26.0 | 43.0 |
| 2 | 49.0 | 43.0 | 92.0 |
| 4 | 97.0 | 23.0 | 0.0 |



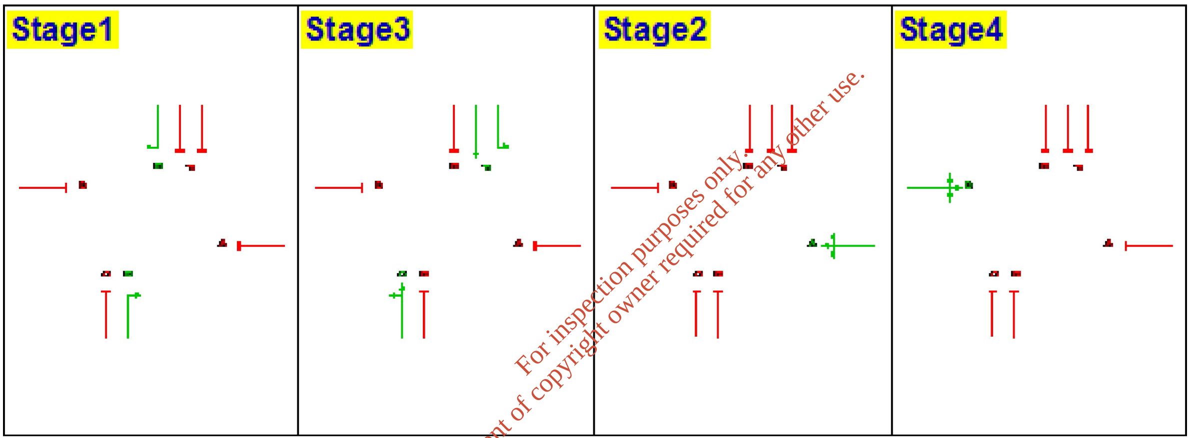
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 49 | 43.0 | 92 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 26.0 | 43 | | | | | | |
| **D** | 97 | 23.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 26.0 | 43 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 521 | A | 44.50 | 46.17 | 6.68 | 78.44 | 14.73 | 2.08 | 14.27 | 12.20 | 24.50 |
| **2** | **1** | 313 | C | 27.50 | 65.45 | 5.69 | 79.22 | 13.60 | 2.08 | 10.66 | 8.58 | 9.50 |
| **2** | **2** | 89 | B | 8.50 | 89.40 | 2.21 | 67.26 | 33.80 | 0.90 | 3.71 | 2.81 | 1.80 |
| **3** | **1** | 284 | D | 24.50 | 66.27 | 5.23 | 77.32 | 16.40 | 1.81 | 9.79 | 7.99 | 8.40 |
| **4** | **1** | 385 | F | 27.50 | 41.87 | 4.48 | 44.39 | 102.77 | 0.25 | 10.97 | 10.72 | 21.40 |
| **4** | **2** | 29 | E | 8.50 | 57.64 | 0.46 | 21.92 | 310.64 | 0.04 | 0.94 | 0.90 | 0.90 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 428 | 1 | 44.50 | 37.36 | 4.44 | 64.44 | 39.66 | 0.82 | 10.64 | 9.82 | 4.60 |
| **2** | **1** | 257 | 3 | 27.50 | 52.15 | 3.72 | 65.05 | 38.36 | 0.80 | 7.77 | 6.96 | 1.80 |
| **2** | **2** | 73 | 2 | 8.50 | 73.15 | 1.48 | 55.17 | 63.13 | 0.42 | 2.72 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 24.50 | 53.96 | 3.49 | 63.44 | 41.87 | 0.73 | 7.21 | 6.48 | 1.50 |
| **4** | **1** | 316 | 6 | 27.50 | 40.45 | 3.55 | 36.43 | 147.04 | 0.15 | 8.81 | 8.67 | 3.20 |
| **4** | **2** | 24 | 5 | 8.50 | 56.38 | 0.38 | 18.14 | 396.19 | 0.03 | 0.77 | 0.75 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 510 | 1 | 44.50 | 44.22 | 6.26 | 76.79 | 17.21 | 1.75 | 13.66 | 11.91 | 4.20 |
| **2** | **1** | 307 | 3 | 27.50 | 61.88 | 5.28 | 77.71 | 15.82 | 1.71 | 10.11 | 8.40 | 1.60 |
| **2** | **2** | 87 | 2 | 8.50 | 84.70 | 2.05 | 65.75 | 36.88 | 0.75 | 3.49 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 24.50 | 62.98 | 4.86 | 75.69 | 18.91 | 1.49 | 9.30 | 7.81 | 1.40 |
| **4** | **1** | 377 | 6 | 27.50 | 41.69 | 4.37 | 43.46 | 107.07 | 0.24 | 10.71 | 10.48 | 3.50 |
| **4** | **2** | 28 | 5 | 8.50 | 57.36 | 0.45 | 21.16 | 325.30 | 0.04 | 0.91 | 0.87 | 0.10 |

## Traffic Stream Details (07:45-08:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 625 | 1 | 44.50 | 66.01 | 11.46 | 94.10 | -4.36 | 6.69 | 21.67 | 14.98 | 2.50 |
| **2** | **1** | 376 | 3 | 27.50 | 89.88 | 9.39 | 95.17 | -5.43 | 5.83 | 16.28 | 10.45 | 1.10 |
| **2** | **2** | 106 | 2 | 8.50 | 105.74 | 3.11 | 80.11 | 12.34 | 1.61 | 4.96 | 3.35 | 0.30 |
| **3** | **1** | 340 | 4 | 24.50 | 87.51 | 8.27 | 92.57 | -2.77 | 4.65 | 14.33 | 9.68 | 1.10 |
| **4** | **1** | 462 | 6 | 27.50 | 43.70 | 5.61 | 53.26 | 68.97 | 0.44 | 13.52 | 13.08 | 3.80 |
| **4** | **2** | 35 | 5 | 8.50 | 59.14 | 0.57 | 26.45 | 240.24 | 0.06 | 1.15 | 1.09 | 0.20 |



## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 625 | 1 | 44.50 | 76.97 | 13.36 | 94.10 | -4.36 | 7.75 | 22.73 | 14.98 | 2.40 |
| **2** | **1** | 376 | 3 | 27.50 | 109.22 | 11.41 | 95.17 | -5.43 | 7.10 | 17.54 | 10.45 | 1.10 |
| **2** | **2** | 106 | 2 | 8.50 | 116.22 | 3.42 | 80.11 | 12.34 | 1.76 | 5.11 | 3.35 | 0.30 |
| **3** | **1** | 340 | 4 | 24.50 | 102.06 | 9.64 | 92.57 | -2.77 | 5.42 | 15.10 | 9.68 | 1.00 |
| **4** | **1** | 462 | 6 | 27.50 | 43.72 | 5.61 | 53.26 | 68.97 | 0.44 | 13.52 | 13.08 | 3.80 |
| **4** | **2** | 35 | 5 | 8.50 | 59.24 | 0.58 | 26.45 | 240.24 | 0.06 | 1.15 | 1.09 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 510 | 1 | 44.50 | 49.79 | 7.05 | 76.79 | 17.21 | 1.99 | 13.90 | 11.91 | 4.10 |
| **2** | **1** | 307 | 3 | 27.50 | 77.31 | 6.59 | 77.71 | 15.82 | 2.13 | 10.53 | 8.40 | 1.60 |
| **2** | **2** | 87 | 2 | 8.50 | 96.38 | 2.33 | 65.75 | 36.88 | 0.95 | 3.69 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 24.50 | 74.00 | 5.71 | 75.69 | 18.91 | 1.82 | 9.62 | 7.81 | 1.40 |
| **4** | **1** | 377 | 6 | 27.50 | 41.72 | 4.37 | 43.46 | 107.07 | 0.24 | 10.72 | 10.48 | 3.50 |
| **4** | **2** | 28 | 5 | 8.50 | 57.48 | 0.45 | 21.16 | 325.30 | 0.04 | 0.91 | 0.87 | 0.10 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 428 | 1 | 44.50 | 38.08 | 4.53 | 64.44 | 39.66 | 0.87 | 10.68 | 9.82 | 4.60 |
| **2** | **1** | 257 | 3 | 27.50 | 54.40 | 3.88 | 65.05 | 38.36 | 0.88 | 7.84 | 6.96 | 1.80 |
| **2** | **2** | 73 | 2 | 8.50 | 78.86 | 1.60 | 55.17 | 63.13 | 0.49 | 2.78 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 24.50 | 56.03 | 3.63 | 63.44 | 41.87 | 0.80 | 7.28 | 6.48 | 1.50 |
| **4** | **1** | 316 | 6 | 27.50 | 40.47 | 3.55 | 36.43 | 147.04 | 0.15 | 8.81 | 8.67 | 3.20 |
| **4** | **2** | 24 | 5 | 8.50 | 56.46 | 0.38 | 18.14 | 396.19 | 0.03 | 0.77 | 0.75 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads.osc
**Report generation date:** 05/12/2016 16:54:16

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

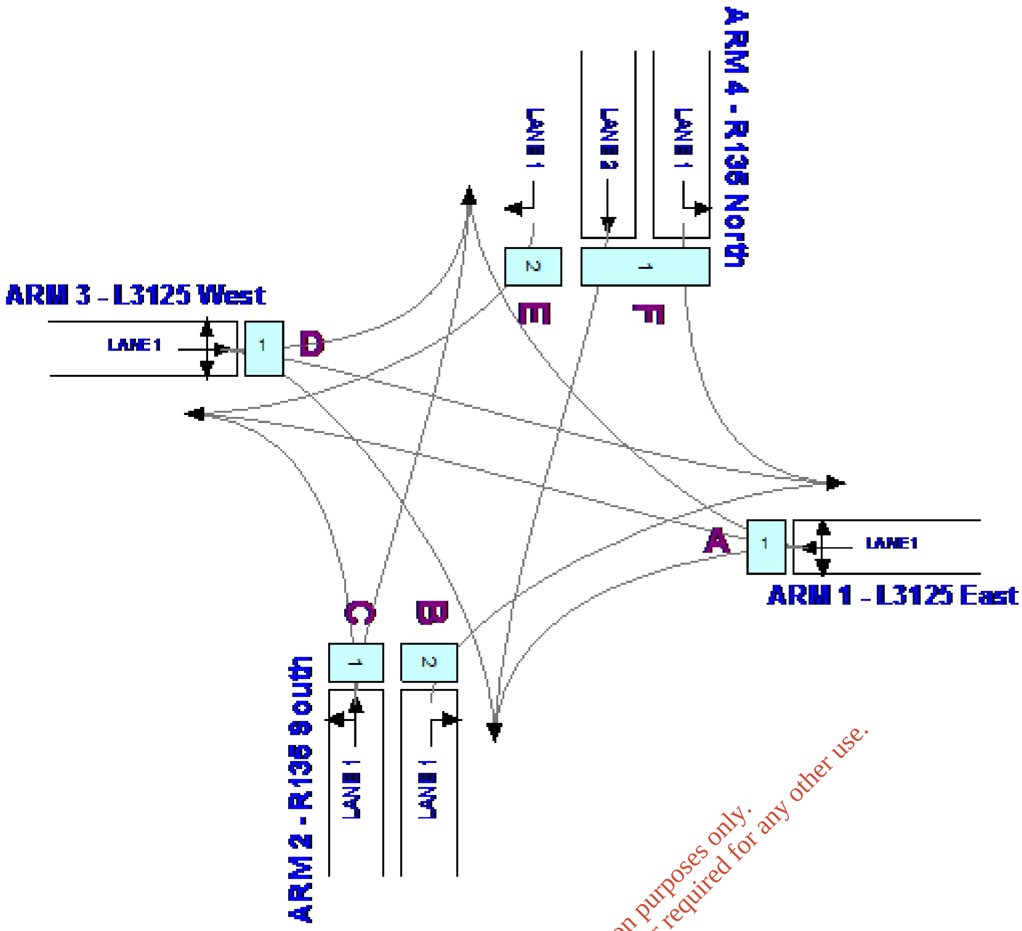
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

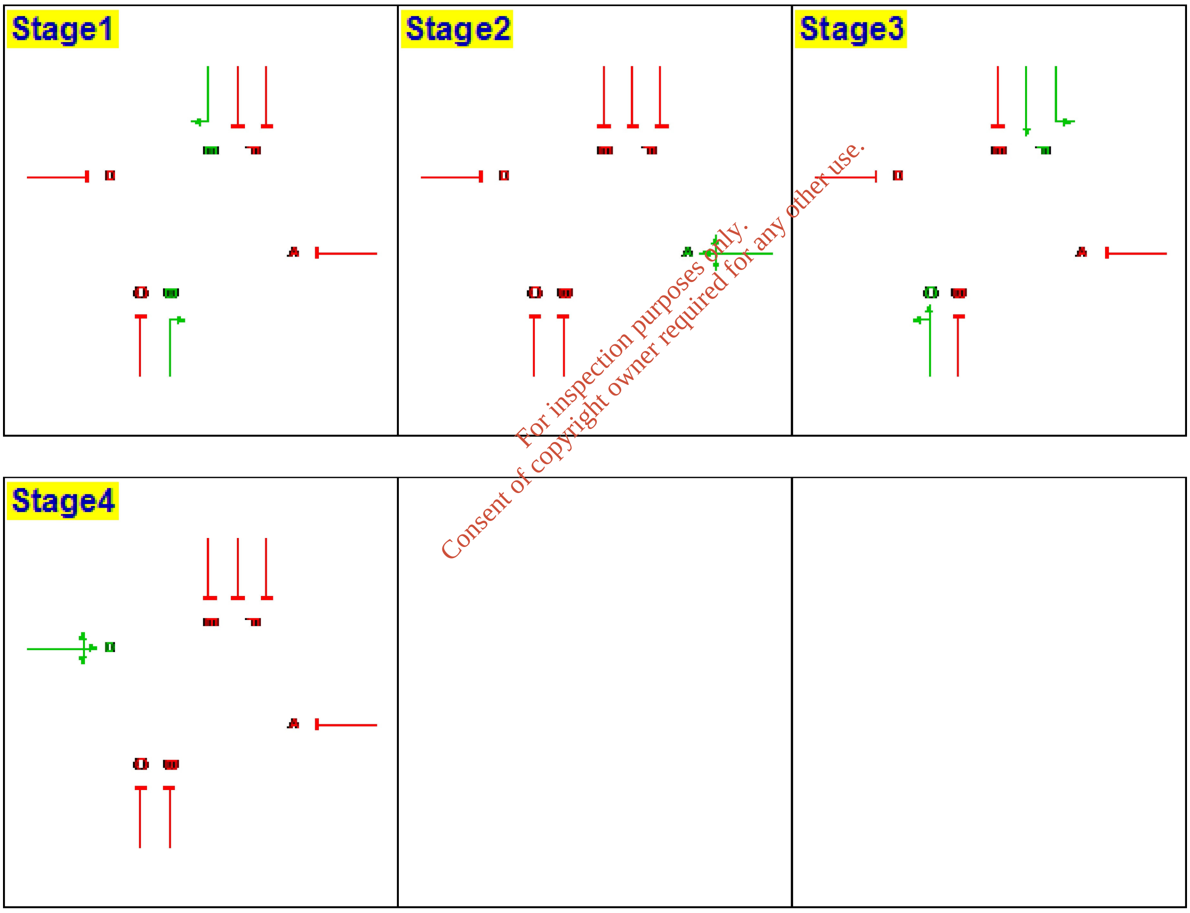
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2022 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak Sensitivity | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2032 AM Peak + Link | Yes | 07:15 | 08:45 | ODTAB | No | D1 |

## Demand Set10 - 2032 AM Peak + Link

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 110 | 359 | 50 |
| | **Arm 2** | 96 | - | 243 | 85 |
| | **Arm 3** | 177 | 121 | - | 12 |
| | **Arm 4** | 127 | 150 | 33 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 07:15-07:30 | 07:30-07:45 | 07:45-08:00 | 08:00-08:15 | 08:15-08:30 | 08:30-08:45 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 389 | 465 | 569 | 569 | 465 | 389 |
| 2 - R135 South | 1 | C | 245 | 292 | 358 | 358 | 292 | 245 |
| 2 - R135 South | 2 | B | 73 | 87 | 107 | 107 | 87 | 73 |
| 3 - L3125 West | 1 | D | 233 | 278 | 340 | 340 | 278 | 233 |
| 4 - R135 North | 1 | F | 207 | 247 | 303 | 303 | 247 | 207 |
| 4 - R135 North | 2 | E | 26 | 31 | 37 | 37 | 31 | 26 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 21 | 69 | 10 |
| 2 - R135 South | 57 | 20 | 23 |
| 3 - L3125 West | 4 | 57 | 39 |
| 4 - R135 North | 41 | 48 | 11 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 20.44 | 20.91 | 20.91 | 63.3 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | 0.33 | 22.71 | 22.71 | 60.30 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

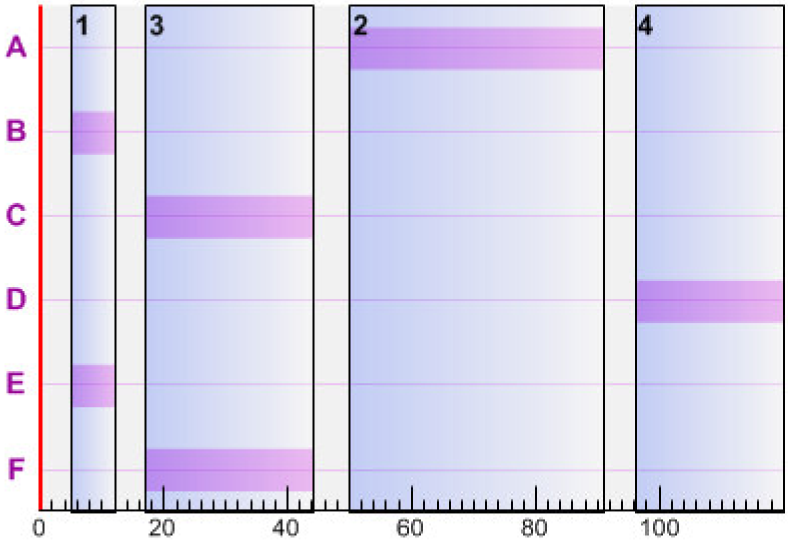
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 7.0 | 12.0 |
| 3 | 17.0 | 27.0 | 44.0 |
| 2 | 50.0 | 41.0 | 91.0 |
| 4 | 96.0 | 24.0 | 0.0 |

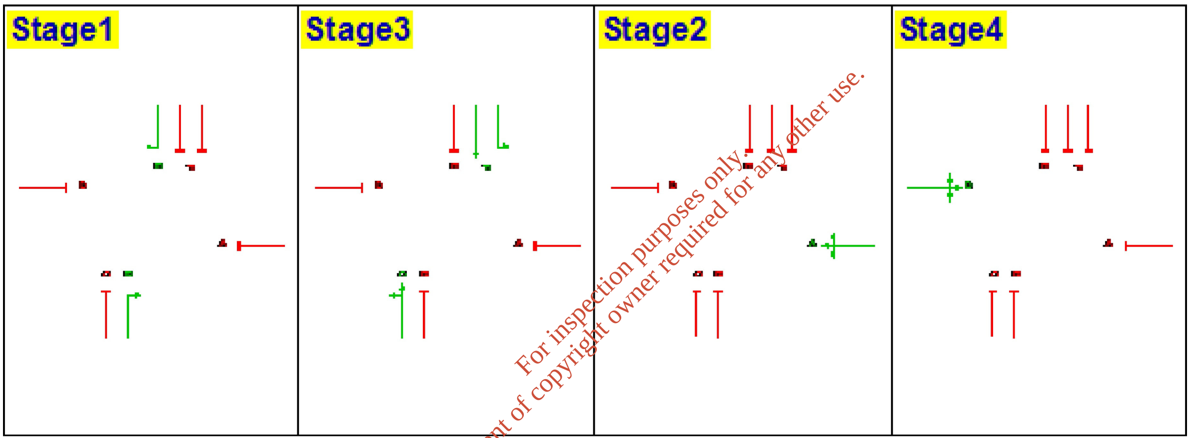
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 50 | 41.0 | 91 | | | | | | |
| **B** | 5 | 7.0 | 12 | | | | | | |
| **C** | 17 | 27.0 | 44 | | | | | | |
| **D** | 96 | 24.0 | 0 | | | | | | |
| **E** | 5 | 7.0 | 12 | | | | | | |
| **F** | 17 | 27.0 | 44 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 474 | A | 42.50 | 44.89 | 5.91 | 74.73 | 20.44 | 1.59 | 12.87 | 11.27 | 23.50 |
| **2** | **1** | 298 | C | 28.50 | 57.29 | 4.74 | 72.78 | 23.66 | 1.35 | 9.40 | 8.05 | 10.80 |
| **2** | **2** | 89 | B | 8.50 | 89.40 | 2.21 | 67.26 | 33.80 | 0.90 | 3.71 | 2.81 | 1.80 |
| **3** | **1** | 284 | D | 25.50 | 61.59 | 4.86 | 74.29 | 21.15 | 1.48 | 9.38 | 7.90 | 9.20 |
| **4** | **1** | 252 | F | 28.50 | 38.40 | 2.69 | 28.03 | 221.05 | 0.08 | 6.82 | 6.74 | 17.10 |
| **4** | **2** | 31 | E | 8.50 | 58.14 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.90 |

## Traffic Stream Details (07:15-07:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 389 | 1 | 42.50 | 37.65 | 4.07 | 61.33 | 46.76 | 0.68 | 9.76 | 9.08 | 4.20 |
| **2** | **1** | 245 | 3 | 28.50 | 48.78 | 3.32 | 59.84 | 50.41 | 0.60 | 7.15 | 6.55 | 1.90 |
| **2** | **2** | 73 | 2 | 8.50 | 73.15 | 1.48 | 55.17 | 63.13 | 0.42 | 2.72 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 25.50 | 51.78 | 3.35 | 60.95 | 47.66 | 0.63 | 7.05 | 6.42 | 1.60 |
| **4** | **1** | 207 | 6 | 28.50 | 37.69 | 2.17 | 23.03 | 290.84 | 0.05 | 5.54 | 5.49 | 2.40 |
| **4** | **2** | 26 | 5 | 8.50 | 56.83 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

## Traffic Stream Details (07:30-07:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 465 | 1 | 42.50 | 43.53 | 5.62 | 73.31 | 22.77 | 1.39 | 12.43 | 11.04 | 4.00 |
| **2** | **1** | 292 | 3 | 28.50 | 55.45 | 4.50 | 71.32 | 26.20 | 1.17 | 9.05 | 7.88 | 1.80 |
| **2** | **2** | 87 | 2 | 8.50 | 84.70 | 2.05 | 65.75 | 36.88 | 0.75 | 3.49 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 25.50 | 59.25 | 4.58 | 72.72 | 23.76 | 1.26 | 8.98 | 7.73 | 1.50 |
| **4** | **1** | 247 | 6 | 28.50 | 38.32 | 2.63 | 27.48 | 227.55 | 0.07 | 6.68 | 6.60 | 2.80 |
| **4** | **2** | 31 | 5 | 8.50 | 58.11 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (07:45-08:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 569 | 1 | 42.50 | 59.89 | 9.47 | 89.70 | 0.33 | 4.47 | 18.29 | 13.82 | 2.80 |
| **2** | **1** | 358 | 3 | 28.50 | 72.79 | 7.24 | 87.43 | 2.93 | 3.30 | 13.10 | 9.80 | 1.40 |
| **2** | **2** | 107 | 2 | 8.50 | 106.90 | 3.18 | 80.87 | 11.29 | 1.67 | 5.06 | 3.39 | 0.30 |
| **3** | **1** | 340 | 4 | 25.50 | 78.69 | 7.43 | 88.94 | 1.19 | 3.61 | 13.19 | 9.58 | 1.20 |
| **4** | **1** | 303 | 6 | 28.50 | 39.26 | 3.30 | 33.71 | 167.01 | 0.12 | 8.32 | 8.20 | 3.20 |
| **4** | **2** | 37 | 5 | 8.50 | 59.71 | 0.61 | 27.96 | 221.85 | 0.07 | 1.23 | 1.15 | 0.20 |



## Traffic Stream Details (08:00-08:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 569 | 1 | 42.50 | 65.26 | 10.32 | 89.70 | 0.33 | 4.85 | 18.67 | 13.82 | 2.70 |
| **2** | **1** | 358 | 3 | 28.50 | 79.24 | 7.88 | 87.43 | 2.93 | 3.59 | 13.39 | 9.80 | 1.40 |
| **2** | **2** | 107 | 2 | 8.50 | 118.29 | 3.52 | 80.87 | 11.29 | 1.84 | 5.22 | 3.39 | 0.30 |
| **3** | **1** | 340 | 4 | 25.50 | 87.25 | 8.24 | 88.94 | 1.19 | 4.00 | 13.57 | 9.58 | 1.20 |
| **4** | **1** | 303 | 6 | 28.50 | 39.26 | 3.30 | 33.71 | 167.01 | 0.12 | 8.32 | 8.20 | 3.20 |
| **4** | **2** | 37 | 5 | 8.50 | 59.78 | 0.61 | 27.96 | 221.85 | 0.07 | 1.23 | 1.15 | 0.20 |

## Traffic Stream Details (08:15-08:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 465 | 1 | 42.50 | 46.27 | 5.98 | 73.31 | 22.77 | 1.54 | 12.58 | 11.04 | 3.90 |
| **2** | **1** | 292 | 3 | 28.50 | 59.64 | 4.84 | 71.32 | 26.20 | 1.32 | 9.21 | 7.88 | 1.80 |
| **2** | **2** | 87 | 2 | 8.50 | 97.18 | 2.35 | 65.75 | 36.88 | 0.95 | 3.69 | 2.74 | 0.30 |
| **3** | **1** | 278 | 4 | 25.50 | 65.15 | 5.03 | 72.72 | 23.76 | 1.46 | 9.19 | 7.73 | 1.50 |
| **4** | **1** | 247 | 6 | 28.50 | 38.32 | 2.63 | 27.48 | 227.55 | 0.07 | 6.68 | 6.60 | 2.80 |
| **4** | **2** | 31 | 5 | 8.50 | 58.21 | 0.50 | 23.43 | 284.15 | 0.05 | 1.01 | 0.97 | 0.20 |

## Traffic Stream Details (08:30-08:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 389 | 1 | 42.50 | 38.18 | 4.13 | 61.33 | 46.76 | 0.71 | 9.79 | 9.08 | 4.20 |
| **2** | **1** | 245 | 3 | 28.50 | 49.82 | 3.39 | 59.84 | 50.41 | 0.64 | 7.19 | 6.55 | 1.90 |
| **2** | **2** | 73 | 2 | 8.50 | 78.86 | 1.60 | 55.17 | 63.13 | 0.49 | 2.78 | 2.29 | 0.30 |
| **3** | **1** | 233 | 4 | 25.50 | 53.16 | 3.44 | 60.95 | 47.66 | 0.68 | 7.10 | 6.42 | 1.60 |
| **4** | **1** | 207 | 6 | 28.50 | 37.69 | 2.17 | 23.03 | 290.84 | 0.05 | 5.54 | 5.49 | 2.50 |
| **4** | **2** | 26 | 5 | 8.50 | 56.95 | 0.41 | 19.65 | 358.02 | 0.03 | 0.84 | 0.81 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 10:37:35

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

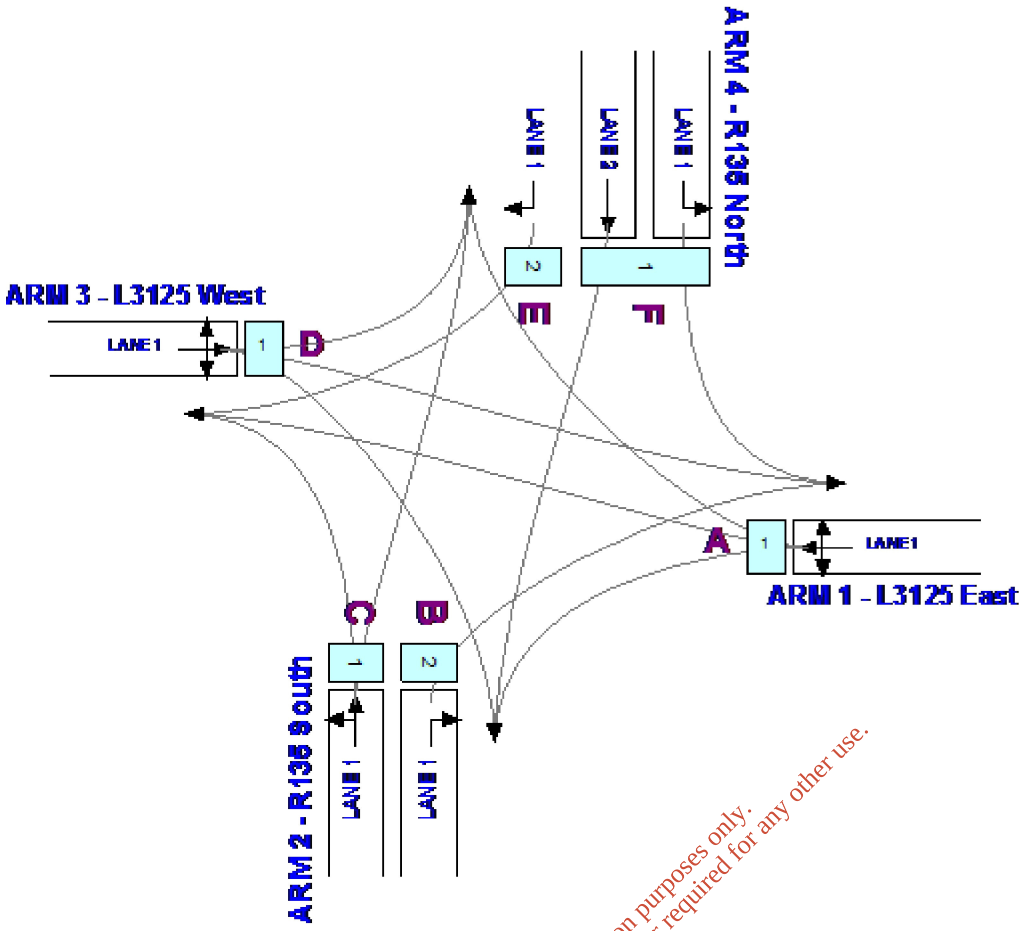
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

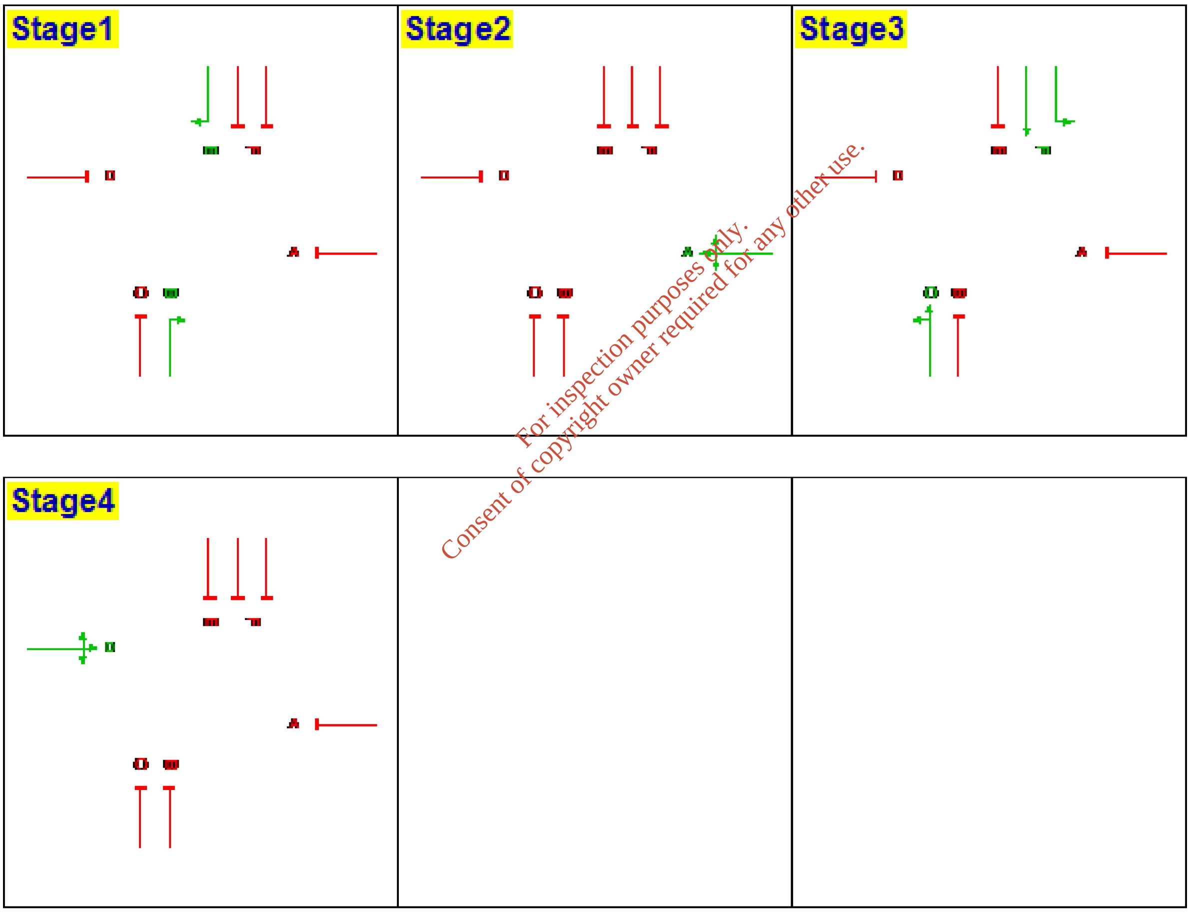
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:**Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | Yes | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2023 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2023 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |



## Demand Set6 - 2016 PM Peak Existing

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 91 | 221 | 216 |
| | **Arm 2** | 136 | - | 135 | 127 |
| | **Arm 3** | 179 | 175 | - | 24 |
| | **Arm 4** | 177 | 97 | 18 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 396 | 473 | 579 | 579 | 473 | 396 |
| 2 - R135 South | 1 | C | 197 | 235 | 288 | 288 | 235 | 197 |
| 2 - R135 South | 2 | B | 101 | 121 | 148 | 148 | 121 | 101 |
| 3 - L3125 West | 1 | D | 281 | 335 | 410 | 410 | 335 | 281 |
| 4 - R135 North | 1 | F | 206 | 246 | 301 | 301 | 246 | 206 |
| 4 - R135 North | 2 | E | 13 | 16 | 19 | 19 | 16 | 13 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 61 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:*** *Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 15.83 | 22.96 | 22.96 | 57.3 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -3.47 | 25.46 | 25.46 | 54.40 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

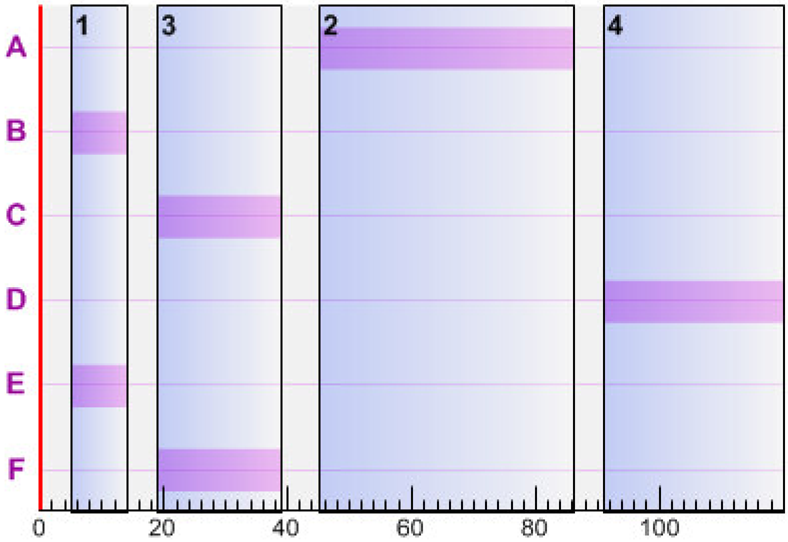
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 20.0 | 39.0 |
| 2 | 45.0 | 41.0 | 86.0 |
| 4 | 91.0 | 29.0 | 0.0 |

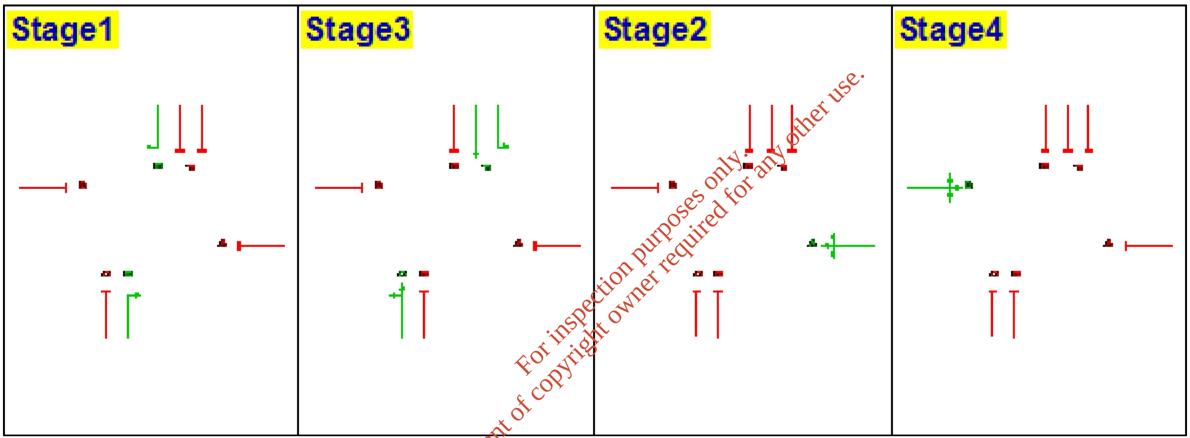
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 45 | 41.0 | 86 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 20.0 | 39 | | | | | | |
| **D** | 91 | 29.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 20.0 | 39 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 483 | A | 42.50 | 45.96 | 6.17 | 76.15 | 18.19 | 1.76 | 13.27 | 11.51 | 23.10 |
| **2** | **1** | 240 | C | 21.50 | 72.43 | 4.83 | 77.70 | 15.83 | 1.83 | 8.73 | 6.90 | 6.40 |
| **2** | **2** | 123 | B | 10.50 | 94.46 | 3.23 | 75.25 | 19.60 | 1.49 | 5.32 | 3.84 | 2.40 |
| **3** | **1** | 342 | D | 30.50 | 56.21 | 5.34 | 74.80 | 20.33 | 1.55 | 10.68 | 9.13 | 12.50 |
| **4** | **1** | 251 | F | 21.50 | 45.35 | 3.16 | 37.01 | 143.16 | 0.15 | 7.38 | 7.23 | 12.30 |
| **4** | **2** | 16 | E | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 396 | 1 | 42.50 | 38.06 | 4.19 | 62.43 | 44.16 | 0.73 | 9.98 | 9.26 | 4.20 |
| **2** | **1** | 197 | 3 | 21.50 | 57.87 | 3.17 | 63.78 | 41.11 | 0.73 | 6.34 | 5.61 | 1.10 |
| **2** | **2** | 101 | 2 | 10.50 | 72.84 | 2.04 | 61.79 | 45.65 | 0.62 | 3.75 | 3.14 | 0.40 |
| **3** | **1** | 281 | 4 | 30.50 | 47.34 | 3.70 | 61.45 | 46.45 | 0.66 | 8.07 | 7.40 | 2.20 |
| **4** | **1** | 206 | 6 | 21.50 | 44.27 | 2.53 | 30.38 | 196.28 | 0.09 | 5.97 | 5.88 | 1.80 |
| **4** | **2** | 13 | 5 | 10.50 | 51.56 | 0.19 | 7.95 | 9999.00 | 0.00 | 0.40 | 0.40 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 473 | 1 | 42.50 | 44.33 | 5.82 | 74.57 | 20.69 | 1.51 | 12.76 | 11.25 | 3.90 |
| **2** | **1** | 235 | 3 | 21.50 | 68.26 | 4.46 | 76.08 | 18.30 | 1.49 | 8.24 | 6.75 | 1.10 |
| **2** | **2** | 121 | 2 | 10.50 | 87.72 | 2.95 | 74.03 | 21.57 | 1.20 | 4.98 | 3.77 | 0.40 |
| **3** | **1** | 335 | 4 | 30.50 | 54.24 | 5.05 | 73.26 | 22.84 | 1.33 | 10.25 | 8.93 | 2.10 |
| **4** | **1** | 246 | 6 | 21.50 | 45.22 | 3.09 | 36.28 | 148.10 | 0.14 | 7.22 | 7.08 | 2.00 |
| **4** | **2** | 16 | 5 | 10.50 | 51.96 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 579 | 1 | 42.50 | 62.54 | 10.06 | 91.28 | -1.40 | 5.11 | 19.21 | 14.10 | 2.60 |
| **2** | **1** | 288 | 3 | 21.50 | 95.68 | 7.65 | 93.24 | -3.47 | 4.56 | 12.93 | 8.36 | 0.80 |
| **2** | **2** | 148 | 2 | 10.50 | 118.53 | 4.87 | 90.55 | -0.60 | 3.04 | 7.68 | 4.64 | 0.40 |
| **3** | **1** | 410 | 4 | 30.50 | 73.02 | 8.32 | 89.67 | 0.37 | 4.02 | 15.13 | 11.10 | 1.60 |
| **4** | **1** | 301 | 6 | 21.50 | 46.69 | 3.90 | 44.39 | 102.77 | 0.25 | 9.01 | 8.76 | 2.30 |
| **4** | **2** | 19 | 5 | 10.50 | 52.38 | 0.28 | 11.62 | 674.24 | 0.01 | 0.59 | 0.58 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 579 | 1 | 42.50 | 69.60 | 11.19 | 91.28 | -1.40 | 5.66 | 19.75 | 14.10 | 2.60 |
| **2** | **1** | 288 | 3 | 21.50 | 113.91 | 9.11 | 93.24 | -3.47 | 5.43 | 13.79 | 8.36 | 0.80 |
| **2** | **2** | 148 | 2 | 10.50 | 140.92 | 5.79 | 90.55 | -0.60 | 3.59 | 8.23 | 4.64 | 0.40 |
| **3** | **1** | 410 | 4 | 30.50 | 80.83 | 9.21 | 89.67 | 0.37 | 4.45 | 15.55 | 11.10 | 1.60 |
| **4** | **1** | 301 | 6 | 21.50 | 46.71 | 3.91 | 44.39 | 102.77 | 0.25 | 9.01 | 8.76 | 2.30 |
| **4** | **2** | 19 | 5 | 10.50 | 52.38 | 0.28 | 11.62 | 674.24 | 0.01 | 0.59 | 0.58 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 473 | 1 | 42.50 | 47.90 | 6.29 | 74.57 | 20.69 | 1.68 | 12.93 | 11.25 | 3.90 |
| **2** | **1** | 235 | 3 | 21.50 | 84.06 | 5.49 | 76.08 | 18.30 | 1.88 | 8.63 | 6.75 | 1.10 |
| **2** | **2** | 121 | 2 | 10.50 | 114.18 | 3.84 | 74.03 | 21.57 | 1.67 | 5.44 | 3.77 | 0.40 |
| **3** | **1** | 335 | 4 | 30.50 | 59.07 | 5.50 | 73.26 | 22.84 | 1.52 | 10.45 | 8.93 | 2.10 |
| **4** | **1** | 246 | 6 | 21.50 | 45.24 | 3.09 | 36.28 | 148.10 | 0.14 | 7.22 | 7.08 | 2.00 |
| **4** | **2** | 16 | 5 | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 396 | 1 | 42.50 | 38.67 | 4.25 | 62.43 | 44.16 | 0.76 | 10.02 | 9.26 | 4.20 |
| **2** | **1** | 197 | 3 | 21.50 | 60.94 | 3.33 | 63.78 | 41.11 | 0.81 | 6.42 | 5.61 | 1.10 |
| **2** | **2** | 101 | 2 | 10.50 | 81.40 | 2.28 | 61.79 | 45.65 | 0.73 | 3.86 | 3.14 | 0.40 |
| **3** | **1** | 281 | 4 | 30.50 | 48.37 | 3.78 | 61.45 | 46.45 | 0.71 | 8.11 | 7.40 | 2.20 |
| **4** | **1** | 206 | 6 | 21.50 | 44.29 | 2.53 | 30.38 | 196.28 | 0.09 | 5.97 | 5.88 | 1.80 |
| **4** | **2** | 13 | 5 | 10.50 | 51.57 | 0.19 | 7.95 | 9999.00 | 0.00 | 0.40 | 0.40 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 10:38:24

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

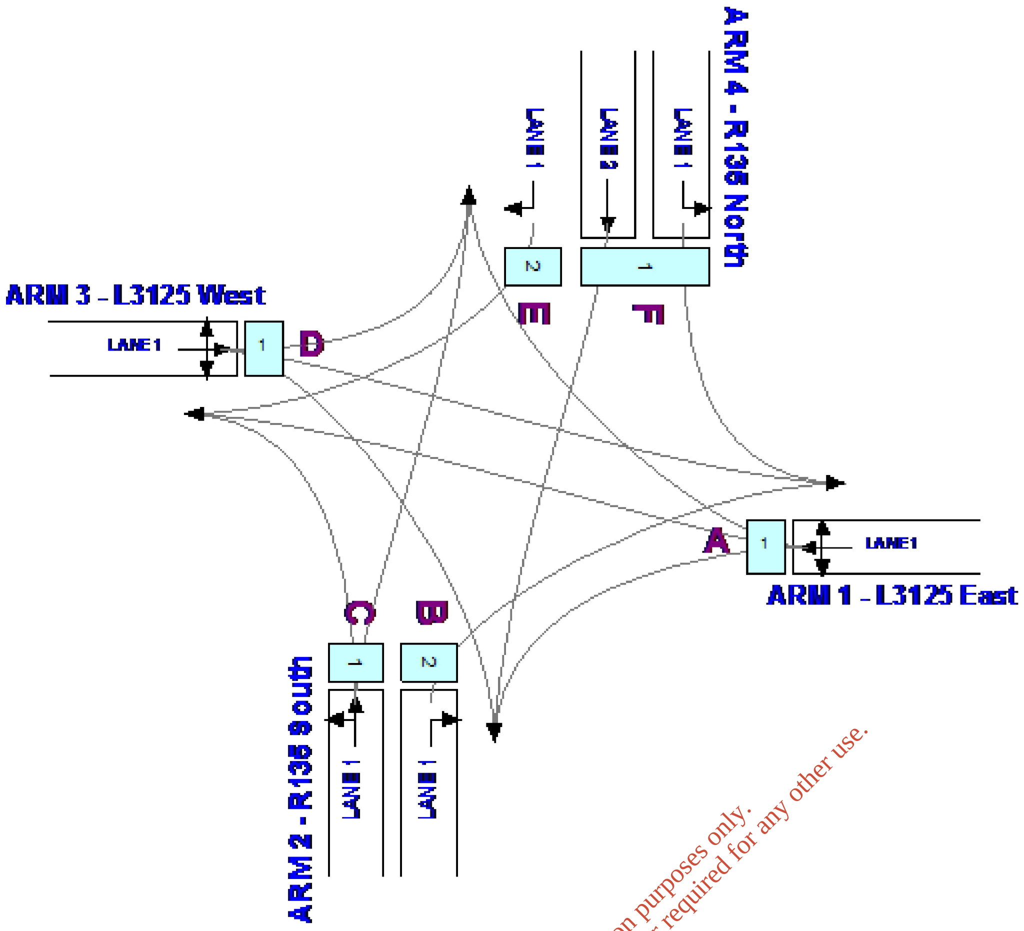
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

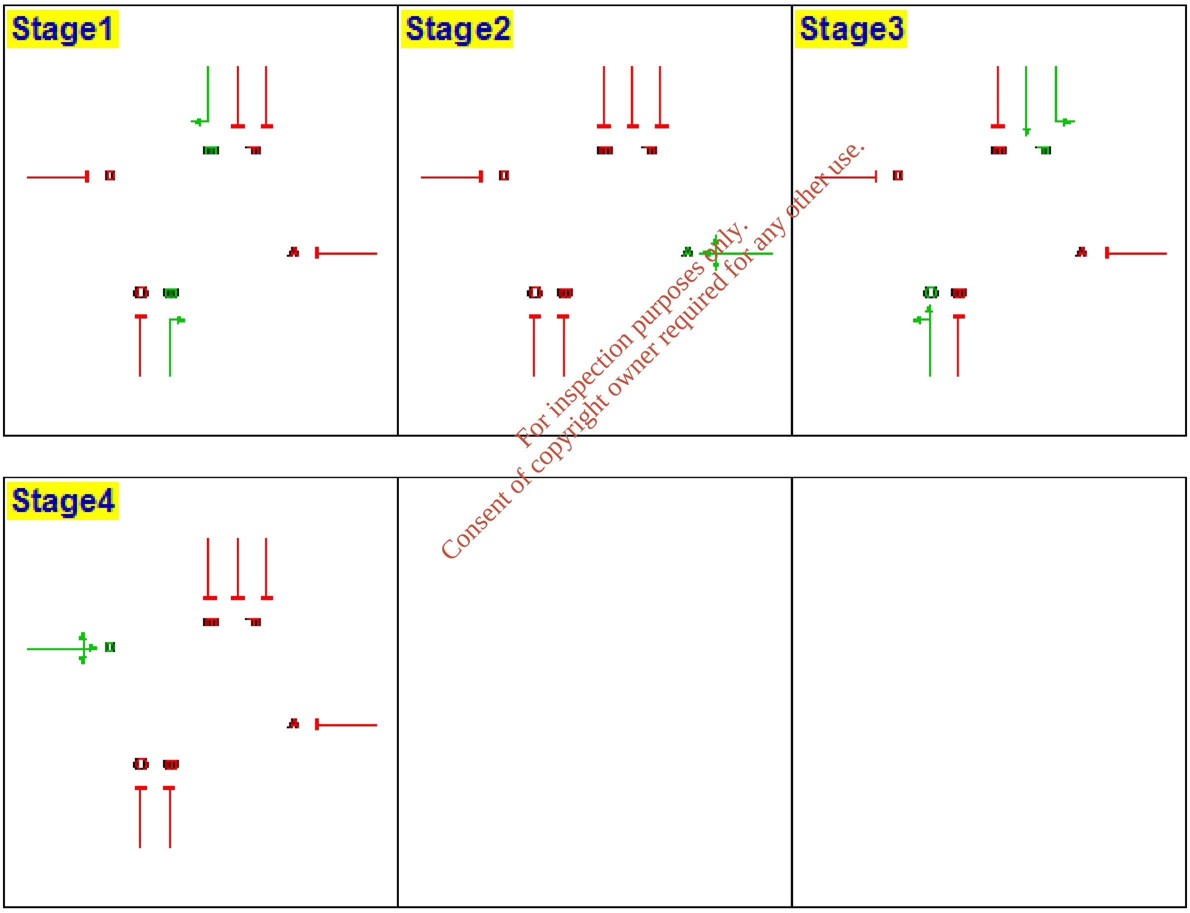
## Intergreen Matrix

| | To | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2023 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2023 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set7 - 2017 PM Peak No Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 92 | 223 | 218 |
| | **Arm 2** | 137 | - | 136 | 128 |
| | **Arm 3** | 180 | 176 | - | 24 |
| | **Arm 4** | 178 | 98 | 18 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 400 | 477 | 585 | 585 | 477 | 400 |
| 2 - R135 South | 1 | C | 198 | 237 | 290 | 290 | 237 | 198 |
| 2 - R135 South | 2 | B | 102 | 122 | 150 | 150 | 122 | 102 |
| 3 - L3125 West | 1 | D | 282 | 337 | 413 | 413 | 337 | 282 |
| 4 - R135 North | 1 | F | 207 | 248 | 303 | 303 | 248 | 207 |
| 4 - R135 North | 2 | E | 13 | 16 | 19 | 19 | 16 | 13 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 61 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 14.87 | 23.42 | 23.42 | 57.2 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -4.14 | 26.12 | 26.12 | 54.00 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

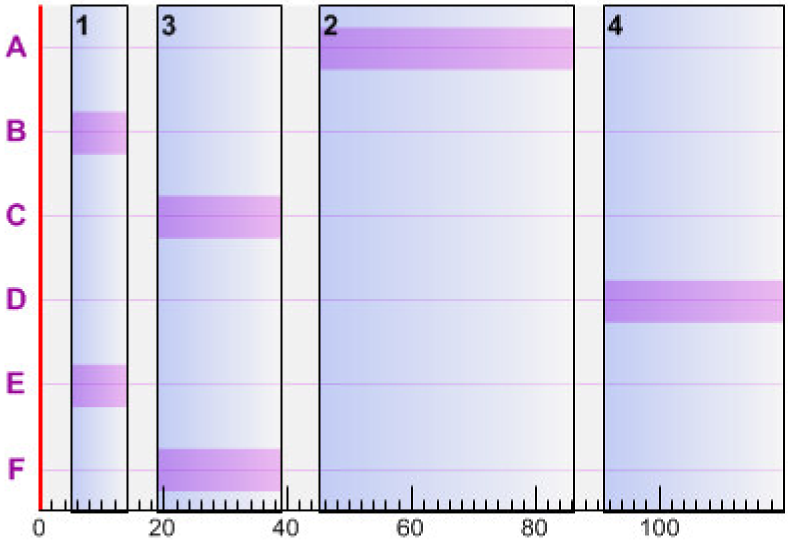
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 20.0 | 39.0 |
| 2 | 45.0 | 41.0 | 86.0 |
| 4 | 91.0 | 29.0 | 0.0 |

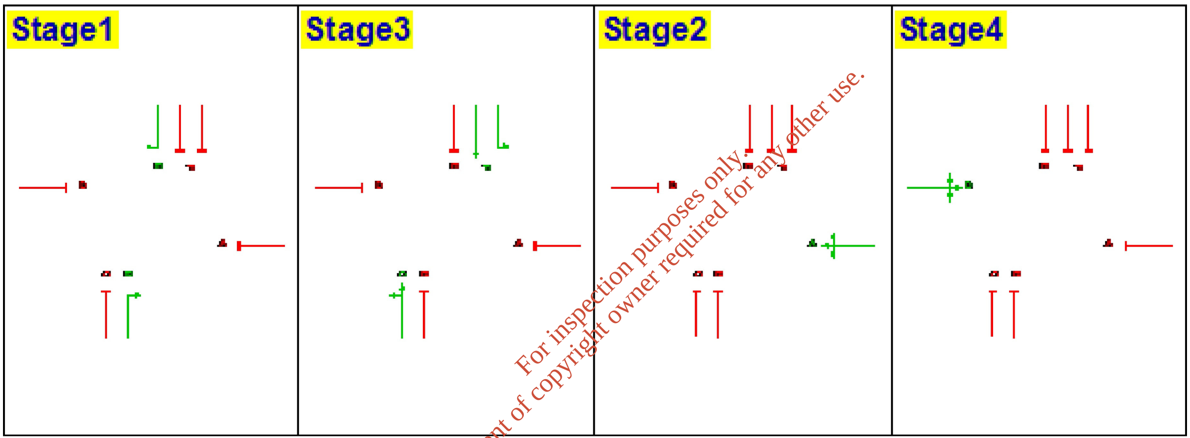
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 45 | 41.0 | 86 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 20.0 | 39 | | | | | | |
| **D** | 91 | 29.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 20.0 | 39 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 487 | A | 42.50 | 46.47 | 6.29 | 76.78 | 17.22 | 1.83 | 13.45 | 11.62 | 22.90 |
| **2** | **1** | 242 | C | 21.50 | 73.39 | 4.93 | 78.35 | 14.87 | 1.91 | 8.87 | 6.96 | 6.40 |
| **2** | **2** | 125 | B | 10.50 | 97.02 | 3.37 | 76.48 | 17.68 | 1.61 | 5.51 | 3.90 | 2.40 |
| **3** | **1** | 344 | D | 30.50 | 56.61 | 5.41 | 75.23 | 19.63 | 1.60 | 10.78 | 9.18 | 12.50 |
| **4** | **1** | 253 | F | 21.50 | 45.40 | 3.19 | 37.31 | 141.24 | 0.15 | 7.45 | 7.29 | 12.40 |
| **4** | **2** | 16 | E | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 400 | 1 | 42.50 | 38.31 | 4.26 | 63.06 | 42.72 | 0.75 | 10.11 | 9.36 | 4.20 |
| **2** | **1** | 198 | 3 | 21.50 | 58.05 | 3.19 | 64.10 | 40.40 | 0.74 | 6.39 | 5.64 | 1.10 |
| **2** | **2** | 102 | 2 | 10.50 | 73.29 | 2.08 | 62.40 | 44.22 | 0.64 | 3.81 | 3.17 | 0.40 |
| **3** | **1** | 282 | 4 | 30.50 | 47.43 | 3.72 | 61.67 | 45.93 | 0.67 | 8.10 | 7.43 | 2.20 |
| **4** | **1** | 207 | 6 | 21.50 | 44.29 | 2.55 | 30.52 | 194.85 | 0.09 | 6.00 | 5.91 | 1.80 |
| **4** | **2** | 13 | 5 | 10.50 | 51.56 | 0.19 | 7.95 | 9999.00 | 0.00 | 0.40 | 0.40 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 477 | 1 | 42.50 | 44.75 | 5.93 | 75.20 | 19.68 | 1.57 | 12.92 | 11.35 | 3.90 |
| **2** | **1** | 237 | 3 | 21.50 | 68.91 | 4.54 | 76.73 | 17.30 | 1.55 | 8.36 | 6.81 | 1.10 |
| **2** | **2** | 122 | 2 | 10.50 | 88.60 | 3.00 | 74.64 | 20.58 | 1.25 | 5.05 | 3.80 | 0.40 |
| **3** | **1** | 337 | 4 | 30.50 | 54.55 | 5.11 | 73.70 | 22.11 | 1.36 | 10.35 | 8.98 | 2.10 |
| **4** | **1** | 248 | 6 | 21.50 | 45.27 | 3.12 | 36.57 | 146.10 | 0.15 | 7.29 | 7.14 | 2.00 |
| **4** | **2** | 16 | 5 | 10.50 | 51.96 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 585 | 1 | 42.50 | 64.24 | 10.44 | 92.23 | -2.41 | 5.55 | 19.81 | 14.26 | 2.50 |
| **2** | **1** | 290 | 3 | 21.50 | 97.28 | 7.84 | 93.89 | -4.14 | 4.78 | 13.20 | 8.42 | 0.80 |
| **2** | **2** | 150 | 2 | 10.50 | 121.27 | 5.05 | 91.77 | -1.93 | 3.25 | 7.96 | 4.70 | 0.40 |
| **3** | **1** | 413 | 4 | 30.50 | 74.18 | 8.51 | 90.32 | -0.36 | 4.23 | 15.42 | 11.19 | 1.60 |
| **4** | **1** | 303 | 6 | 21.50 | 46.75 | 3.93 | 44.68 | 101.43 | 0.25 | 9.08 | 8.83 | 2.30 |
| **4** | **2** | 19 | 5 | 10.50 | 52.38 | 0.28 | 11.62 | 674.24 | 0.01 | 0.59 | 0.58 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 585 | 1 | 42.50 | 72.56 | 11.79 | 92.23 | -2.41 | 6.23 | 20.49 | 14.26 | 2.50 |
| **2** | **1** | 290 | 3 | 21.50 | 116.89 | 9.42 | 93.89 | -4.14 | 5.74 | 14.16 | 8.42 | 0.80 |
| **2** | **2** | 150 | 2 | 10.50 | 146.58 | 6.11 | 91.77 | -1.93 | 3.90 | 8.61 | 4.70 | 0.40 |
| **3** | **1** | 413 | 4 | 30.50 | 82.82 | 9.50 | 90.32 | -0.36 | 4.71 | 15.91 | 11.19 | 1.50 |
| **4** | **1** | 303 | 6 | 21.50 | 46.77 | 3.94 | 44.68 | 101.43 | 0.25 | 9.08 | 8.83 | 2.30 |
| **4** | **2** | 19 | 5 | 10.50 | 52.38 | 0.28 | 11.62 | 674.24 | 0.01 | 0.59 | 0.58 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 477 | 1 | 42.50 | 48.94 | 6.48 | 75.20 | 19.68 | 1.76 | 13.12 | 11.35 | 3.80 |
| **2** | **1** | 237 | 3 | 21.50 | 86.48 | 5.69 | 76.73 | 17.30 | 1.98 | 8.79 | 6.81 | 1.10 |
| **2** | **2** | 122 | 2 | 10.50 | 118.83 | 4.03 | 74.64 | 20.58 | 1.75 | 5.56 | 3.80 | 0.40 |
| **3** | **1** | 337 | 4 | 30.50 | 59.89 | 5.61 | 73.70 | 22.11 | 1.57 | 10.55 | 8.98 | 2.10 |
| **4** | **1** | 248 | 6 | 21.50 | 45.29 | 3.12 | 36.57 | 146.10 | 0.15 | 7.29 | 7.14 | 2.00 |
| **4** | **2** | 16 | 5 | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 400 | 1 | 42.50 | 38.96 | 4.33 | 63.06 | 42.72 | 0.79 | 10.15 | 9.36 | 4.20 |
| **2** | **1** | 198 | 3 | 21.50 | 61.35 | 3.37 | 64.10 | 40.40 | 0.83 | 6.47 | 5.64 | 1.10 |
| **2** | **2** | 102 | 2 | 10.50 | 82.55 | 2.34 | 62.40 | 44.22 | 0.76 | 3.93 | 3.17 | 0.40 |
| **3** | **1** | 282 | 4 | 30.50 | 48.50 | 3.80 | 61.67 | 45.93 | 0.72 | 8.15 | 7.43 | 2.20 |
| **4** | **1** | 207 | 6 | 21.50 | 44.31 | 2.55 | 30.52 | 194.85 | 0.09 | 6.00 | 5.91 | 1.80 |
| **4** | **2** | 13 | 5 | 10.50 | 51.57 | 0.19 | 7.95 | 9999.00 | 0.00 | 0.40 | 0.40 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:32:51

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

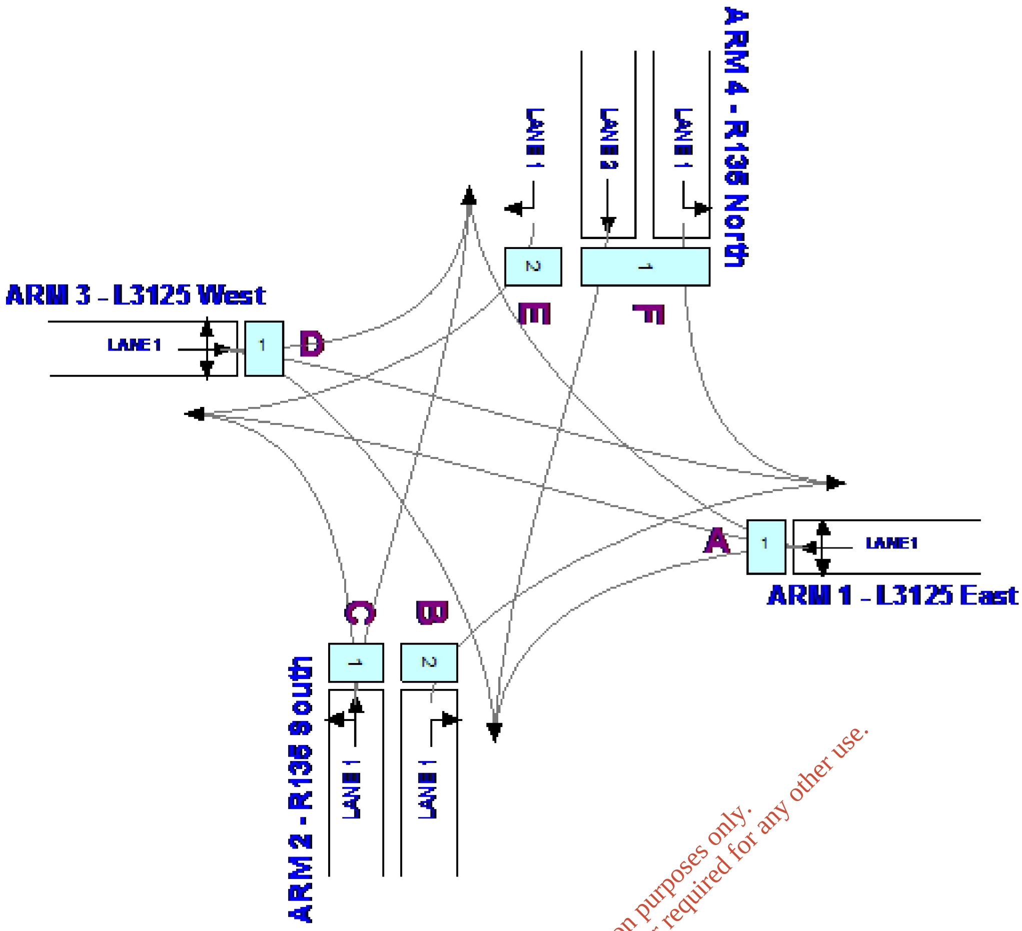
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 0.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

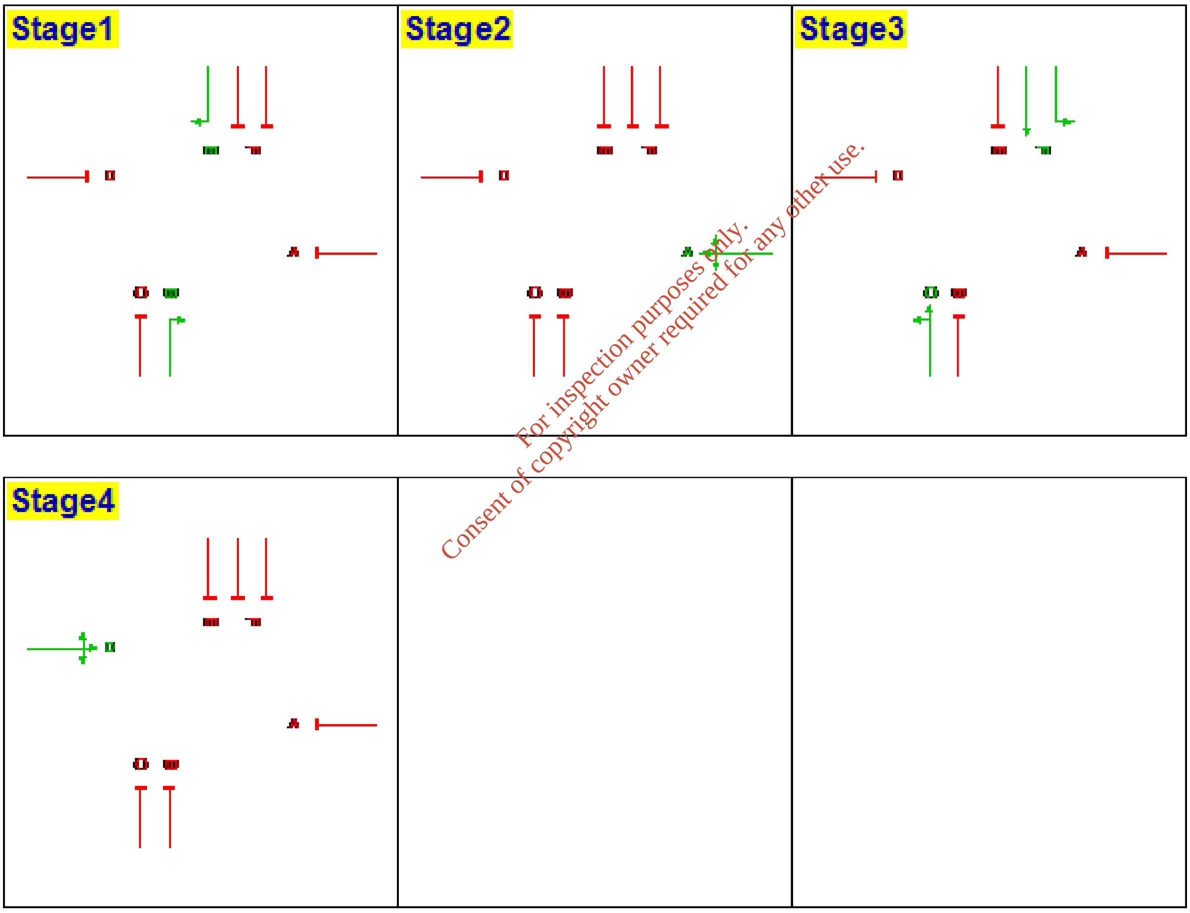
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2032 PM Peak + Link | No | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set8 - 2017 PM Peak With Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 92 | 223 | 218 |
| | **Arm 2** | 137 | - | 136 | 129 |
| | **Arm 3** | 180 | 176 | - | 24 |
| | **Arm 4** | 178 | 99 | 18 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 400 | 477 | 585 | 585 | 477 | 400 |
| 2 - R135 South | 1 | C | 199 | 238 | 291 | 291 | 238 | 199 |
| 2 - R135 South | 2 | B | 103 | 122 | 150 | 150 | 122 | 103 |
| 3 - L3125 West | 1 | D | 282 | 337 | 413 | 413 | 337 | 282 |
| 4 - R135 North | 1 | F | 208 | 248 | 304 | 304 | 248 | 208 |
| 4 - R135 North | 2 | E | 13 | 16 | 19 | 19 | 16 | 13 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 60 | 34 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 15.71 | 23.32 | 23.32 | 57.5 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -3.63 | 26.05 | 26.05 | 54.50 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

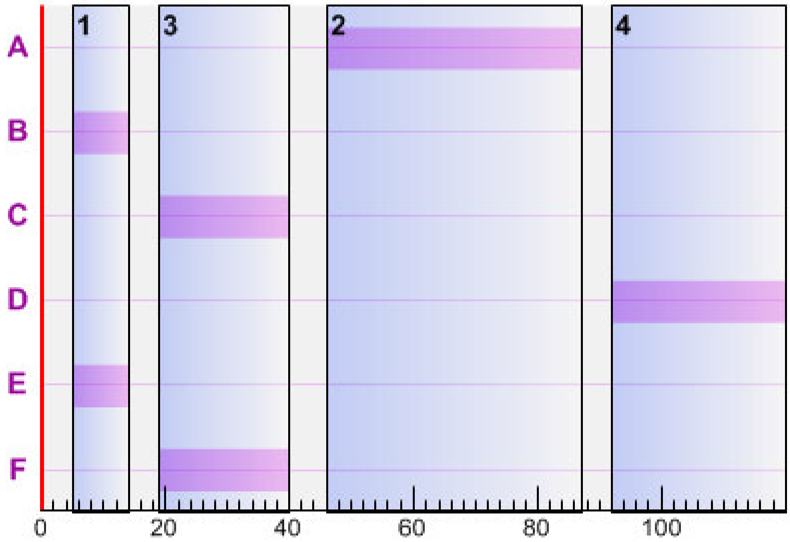
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 21.0 | 40.0 |
| 2 | 46.0 | 41.0 | 87.0 |
| 4 | 92.0 | 28.0 | 0.0 |



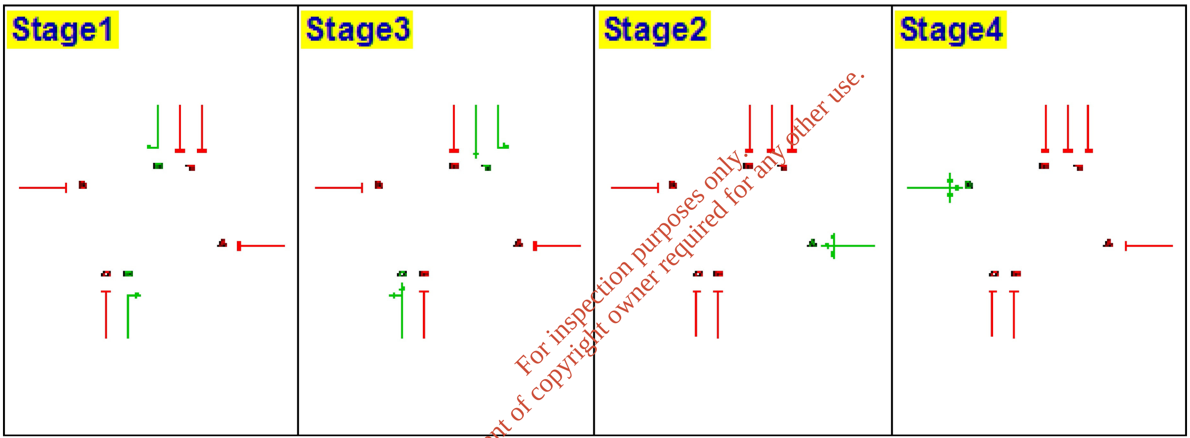
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 46 | 41.0 | 87 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 21.0 | 40 | | | | | | |
| **D** | 92 | 28.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 21.0 | 40 | | | | | | |

**Phase Timings Diagram**




**Final Stage Sequence**






**Traffic Stream Details (Signal Optimiser Run)**

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 487 | A | 42.50 | 46.47 | 6.29 | 76.78 | 17.22 | 1.83 | 13.45 | 11.62 | 22.90 |
| 2 | 1 | 243 | C | 22.50 | 67.50 | 4.56 | 75.17 | 19.72 | 1.55 | 8.46 | 6.92 | 7.10 |
| 2 | 2 | 125 | B | 10.50 | 97.02 | 3.37 | 76.48 | 17.68 | 1.61 | 5.51 | 3.90 | 2.40 |
| 3 | 1 | 344 | D | 29.50 | 60.33 | 5.76 | 77.78 | 15.71 | 1.89 | 11.18 | 9.29 | 11.40 |
| 4 | 1 | 253 | F | 22.50 | 44.30 | 3.11 | 35.65 | 152.46 | 0.14 | 7.35 | 7.22 | 13.10 |
| 4 | 2 | 16 | E | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 400 | 1 | 42.50 | 38.31 | 4.26 | 63.06 | 42.72 | 0.75 | 10.11 | 9.36 | 4.20 |
| 2 | 1 | 199 | 3 | 22.50 | 55.58 | 3.07 | 61.56 | 46.19 | 0.65 | 6.26 | 5.61 | 1.20 |
| 2 | 2 | 103 | 2 | 10.50 | 73.75 | 2.11 | 63.02 | 42.82 | 0.66 | 3.86 | 3.20 | 0.40 |
| 3 | 1 | 282 | 4 | 29.50 | 49.26 | 3.86 | 63.76 | 41.14 | 0.76 | 8.27 | 7.51 | 2.10 |
| 4 | 1 | 208 | 6 | 22.50 | 43.29 | 2.50 | 29.31 | 207.08 | 0.08 | 5.96 | 5.88 | 1.90 |
| 4 | 2 | 13 | 5 | 10.50 | 51.56 | 0.19 | 7.95 | 9999.00 | 0.00 | 0.40 | 0.40 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 477 | 1 | 42.50 | 44.75 | 5.93 | 75.20 | 19.68 | 1.57 | 12.92 | 11.35 | 3.90 |
| 2 | 1 | 238 | 3 | 22.50 | 64.45 | 4.26 | 73.63 | 22.24 | 1.30 | 8.06 | 6.77 | 1.20 |
| 2 | 2 | 122 | 2 | 10.50 | 88.76 | 3.01 | 74.64 | 20.58 | 1.25 | 5.05 | 3.80 | 0.40 |
| 3 | 1 | 337 | 4 | 29.50 | 57.58 | 5.39 | 76.20 | 18.11 | 1.58 | 10.67 | 9.08 | 1.90 |
| 4 | 1 | 248 | 6 | 22.50 | 44.18 | 3.04 | 34.94 | 157.55 | 0.13 | 7.20 | 7.07 | 2.20 |
| 4 | 2 | 16 | 5 | 10.50 | 51.96 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 585 | 1 | 42.50 | 64.24 | 10.44 | 92.23 | -2.41 | 5.55 | 19.81 | 14.26 | 2.50 |
| 2 | 1 | 291 | 3 | 22.50 | 86.83 | 7.02 | 90.02 | -0.03 | 3.70 | 12.07 | 8.37 | 1.00 |
| 2 | 2 | 150 | 2 | 10.50 | 121.40 | 5.06 | 91.77 | -1.93 | 3.25 | 7.96 | 4.70 | 0.40 |
| 3 | 1 | 413 | 4 | 29.50 | 81.65 | 9.37 | 93.39 | -3.63 | 5.32 | 16.63 | 11.32 | 1.40 |
| 4 | 1 | 304 | 6 | 22.50 | 45.56 | 3.85 | 42.84 | 110.10 | 0.22 | 8.99 | 8.77 | 2.40 |
| 4 | 2 | 19 | 5 | 10.50 | 52.38 | 0.28 | 11.62 | 674.24 | 0.01 | 0.59 | 0.58 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 585 | 1 | 42.50 | 72.56 | 11.79 | 92.23 | -2.41 | 6.23 | 20.49 | 14.26 | 2.50 |
| 2 | 1 | 291 | 3 | 22.50 | 98.59 | 7.97 | 90.02 | -0.03 | 4.19 | 12.56 | 8.37 | 0.90 |
| 2 | 2 | 150 | 2 | 10.50 | 146.58 | 6.11 | 91.77 | -1.93 | 3.90 | 8.61 | 4.70 | 0.40 |
| 3 | 1 | 413 | 4 | 29.50 | 95.57 | 10.96 | 93.39 | -3.63 | 6.22 | 17.53 | 11.32 | 1.30 |
| 4 | 1 | 304 | 6 | 22.50 | 45.57 | 3.85 | 42.84 | 110.10 | 0.22 | 8.99 | 8.77 | 2.40 |
| 4 | 2 | 19 | 5 | 10.50 | 52.38 | 0.28 | 11.62 | 674.24 | 0.01 | 0.59 | 0.58 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 477 | 1 | 42.50 | 48.94 | 6.48 | 75.20 | 19.68 | 1.76 | 13.12 | 11.35 | 3.80 |
| **2** | **1** | 238 | 3 | 22.50 | 73.55 | 4.86 | 73.63 | 22.24 | 1.56 | 8.33 | 6.77 | 1.20 |
| **2** | **2** | 122 | 2 | 10.50 | 118.83 | 4.03 | 74.64 | 20.58 | 1.75 | 5.56 | 3.80 | 0.40 |
| **3** | **1** | 337 | 4 | 29.50 | 66.99 | 6.27 | 76.20 | 18.11 | 1.88 | 10.97 | 9.08 | 1.90 |
| **4** | **1** | 248 | 6 | 22.50 | 44.19 | 3.04 | 34.94 | 157.55 | 0.13 | 7.20 | 7.07 | 2.20 |
| **4** | **2** | 16 | 5 | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 400 | 1 | 42.50 | 38.96 | 4.33 | 63.06 | 42.72 | 0.79 | 10.15 | 9.36 | 4.20 |
| **2** | **1** | 199 | 3 | 22.50 | 57.69 | 3.19 | 61.56 | 46.19 | 0.71 | 6.32 | 5.61 | 1.20 |
| **2** | **2** | 103 | 2 | 10.50 | 83.16 | 2.38 | 63.02 | 42.82 | 0.79 | 3.99 | 3.20 | 0.40 |
| **3** | **1** | 282 | 4 | 29.50 | 50.76 | 3.98 | 63.76 | 41.14 | 0.81 | 8.33 | 7.51 | 2.10 |
| **4** | **1** | 208 | 6 | 22.50 | 43.30 | 2.50 | 29.31 | 207.08 | 0.08 | 5.96 | 5.88 | 1.90 |
| **4** | **2** | 13 | 5 | 10.50 | 51.57 | 0.19 | 7.95 | 9999.00 | 0.00 | 0.40 | 0.40 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 10:59:37

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

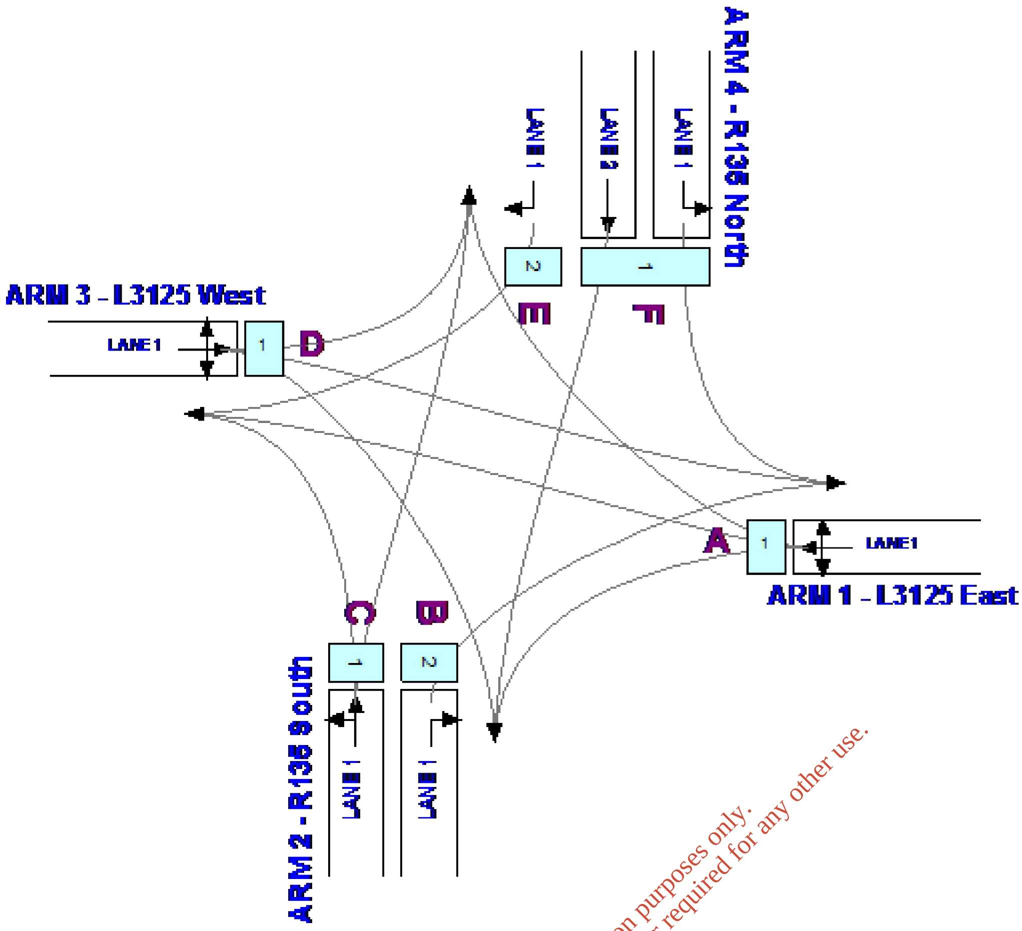
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

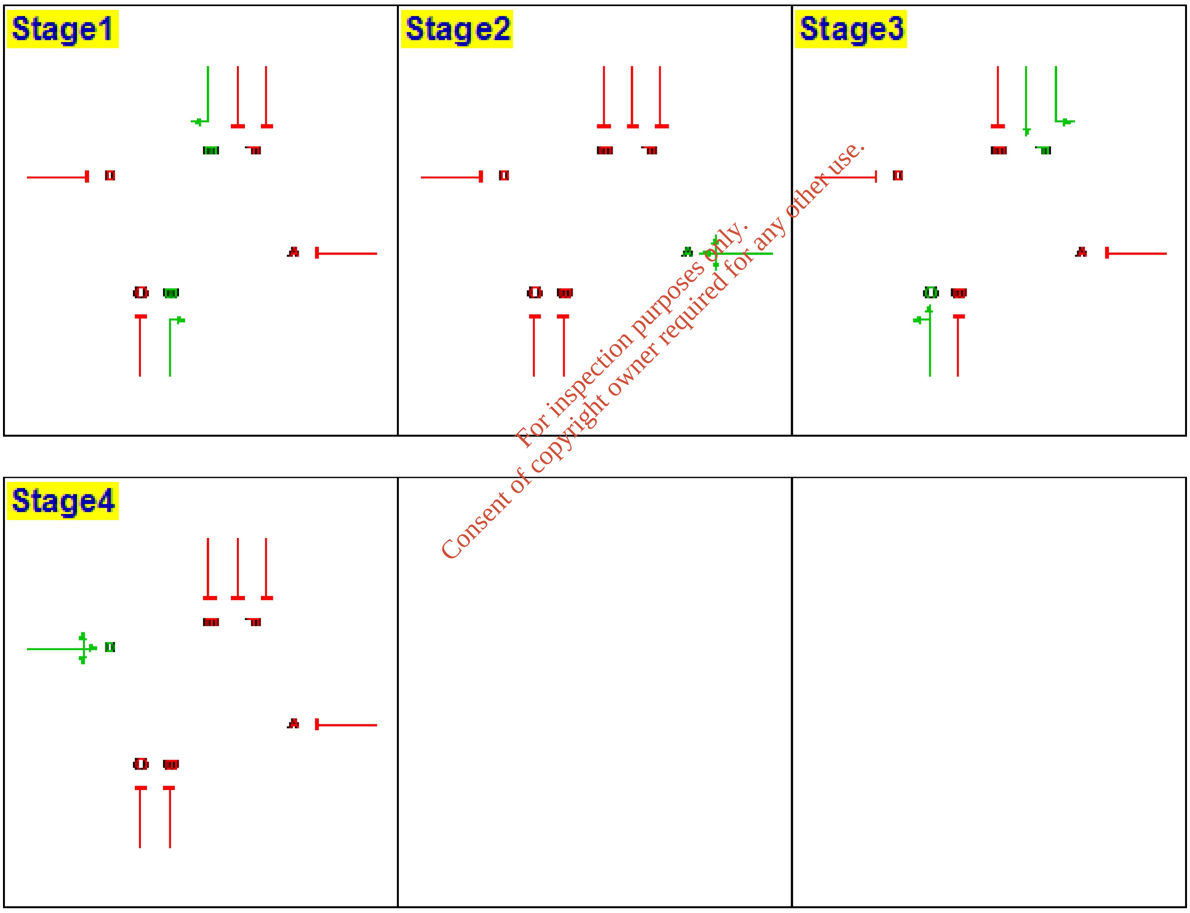
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |
| 2023 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set9 - 2022 PM Peak No Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 96 | 232 | 227 |
| | **Arm 2** | 143 | - | 142 | 133 |
| | **Arm 3** | 188 | 184 | - | 25 |
| | **Arm 4** | 186 | 102 | 19 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 416 | 497 | 609 | 609 | 497 | 416 |
| 2 - R135 South | 1 | C | 207 | 247 | 303 | 303 | 247 | 207 |
| 2 - R135 South | 2 | B | 107 | 127 | 156 | 156 | 127 | 107 |
| 3 - L3125 West | 1 | D | 295 | 352 | 431 | 431 | 352 | 295 |
| 4 - R135 North | 1 | F | 216 | 258 | 317 | 317 | 258 | 216 |
| 4 - R135 North | 2 | E | 14 | 16 | 20 | 20 | 16 | 14 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 61 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 10.32 | 25.83 | 25.83 | 55.6 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -8.25 | 30.07 | 30.07 | 52.10 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

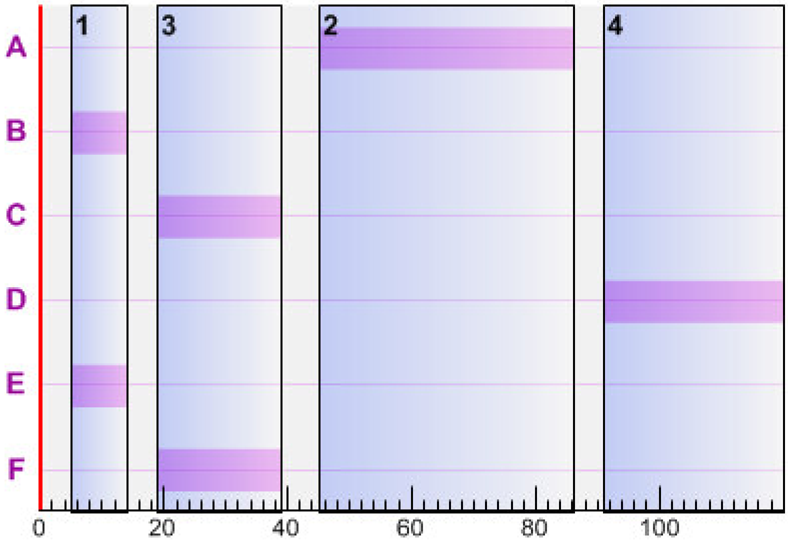
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 20.0 | 39.0 |
| 2 | 45.0 | 41.0 | 86.0 |
| 4 | 91.0 | 29.0 | 0.0 |

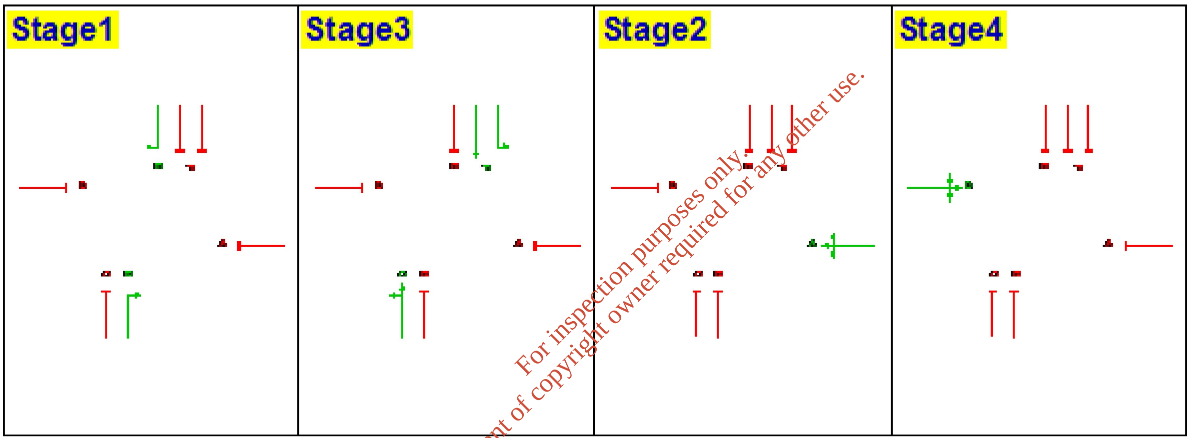
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 45 | 41.0 | 86 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 20.0 | 39 | | | | | | |
| **D** | 91 | 29.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 20.0 | 39 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 507 | A | 42.50 | 49.36 | 6.95 | 79.93 | 12.60 | 2.30 | 14.45 | 12.15 | 21.70 |
| **2** | **1** | 252 | C | 21.50 | 78.99 | 5.53 | 81.58 | 10.32 | 2.42 | 9.68 | 7.26 | 6.20 |
| **2** | **2** | 130 | B | 10.50 | 104.39 | 3.77 | 79.54 | 13.16 | 1.98 | 6.04 | 4.06 | 2.40 |
| **3** | **1** | 359 | D | 30.50 | 59.98 | 5.98 | 78.51 | 14.63 | 2.00 | 11.62 | 9.62 | 12.00 |
| **4** | **1** | 264 | F | 21.50 | 45.69 | 3.35 | 38.93 | 131.19 | 0.17 | 7.80 | 7.63 | 12.70 |
| **4** | **2** | 17 | E | 10.50 | 52.10 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 416 | 1 | 42.50 | 39.33 | 4.54 | 65.58 | 37.23 | 0.87 | 10.64 | 9.77 | 4.20 |
| 2 | 1 | 207 | 3 | 21.50 | 59.76 | 3.44 | 67.02 | 34.30 | 0.88 | 6.79 | 5.91 | 1.10 |
| 2 | 2 | 107 | 2 | 10.50 | 75.67 | 2.25 | 65.46 | 37.48 | 0.75 | 4.08 | 3.33 | 0.40 |
| 3 | 1 | 295 | 4 | 30.50 | 48.69 | 3.99 | 64.52 | 39.50 | 0.79 | 8.59 | 7.79 | 2.20 |
| 4 | 1 | 216 | 6 | 21.50 | 44.50 | 2.67 | 31.85 | 182.56 | 0.10 | 6.28 | 6.18 | 1.90 |
| 4 | 2 | 14 | 5 | 10.50 | 51.69 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 497 | 1 | 42.50 | 47.06 | 6.50 | 78.35 | 14.87 | 1.93 | 13.81 | 11.88 | 3.70 |
| 2 | 1 | 247 | 3 | 21.50 | 72.72 | 4.99 | 79.97 | 12.55 | 1.89 | 9.00 | 7.11 | 1.00 |
| 2 | 2 | 127 | 2 | 10.50 | 93.32 | 3.29 | 77.70 | 15.83 | 1.48 | 5.44 | 3.96 | 0.40 |
| 3 | 1 | 352 | 4 | 30.50 | 57.19 | 5.59 | 76.98 | 16.91 | 1.67 | 11.09 | 9.41 | 2.00 |
| 4 | 1 | 258 | 6 | 21.50 | 45.52 | 3.26 | 38.04 | 136.56 | 0.16 | 7.60 | 7.44 | 2.10 |
| 4 | 2 | 16 | 5 | 10.50 | 51.96 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:00-17:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 609 | 1 | 42.50 | 72.29 | 12.23 | 96.01 | -6.26 | 7.82 | 22.75 | 14.93 | 2.10 |
| 2 | 1 | 303 | 3 | 21.50 | 108.25 | 9.11 | 98.10 | -8.25 | 6.43 | 15.26 | 8.83 | 0.70 |
| 2 | 2 | 156 | 2 | 10.50 | 131.49 | 5.70 | 95.44 | -5.70 | 4.01 | 8.91 | 4.90 | 0.40 |
| 3 | 1 | 431 | 4 | 30.50 | 82.25 | 9.85 | 94.26 | -4.52 | 5.78 | 17.51 | 11.73 | 1.40 |
| 4 | 1 | 317 | 6 | 21.50 | 47.17 | 4.15 | 46.75 | 92.53 | 0.29 | 9.55 | 9.26 | 2.30 |
| 4 | 2 | 20 | 5 | 10.50 | 52.52 | 0.29 | 12.24 | 635.52 | 0.01 | 0.62 | 0.61 | 0.10 |



## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 609 | 1 | 42.50 | 87.90 | 14.87 | 96.01 | -6.26 | 9.48 | 24.41 | 14.93 | 2.00 |
| 2 | 1 | 303 | 3 | 21.50 | 139.59 | 11.75 | 98.10 | -8.25 | 8.35 | 17.17 | 8.83 | 0.70 |
| 2 | 2 | 156 | 2 | 10.50 | 165.93 | 7.19 | 95.44 | -5.70 | 5.05 | 9.95 | 4.90 | 0.40 |
| 3 | 1 | 431 | 4 | 30.50 | 97.56 | 11.68 | 94.26 | -4.52 | 6.86 | 18.58 | 11.73 | 1.30 |
| 4 | 1 | 317 | 6 | 21.50 | 47.19 | 4.16 | 46.75 | 92.53 | 0.29 | 9.55 | 9.26 | 2.30 |
| 4 | 2 | 20 | 5 | 10.50 | 52.52 | 0.29 | 12.24 | 635.52 | 0.01 | 0.62 | 0.61 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 42.50 | 56.04 | 7.74 | 78.35 | 14.87 | 2.25 | 14.13 | 11.88 | 3.60 |
| **2** | **1** | 247 | 3 | 21.50 | 107.47 | 7.37 | 79.97 | 12.55 | 2.62 | 9.73 | 7.11 | 1.00 |
| **2** | **2** | 127 | 2 | 10.50 | 140.11 | 4.94 | 77.70 | 15.83 | 2.25 | 6.21 | 3.96 | 0.40 |
| **3** | **1** | 352 | 4 | 30.50 | 67.69 | 6.62 | 76.98 | 16.91 | 2.00 | 11.42 | 9.41 | 2.00 |
| **4** | **1** | 258 | 6 | 21.50 | 45.55 | 3.26 | 38.04 | 136.56 | 0.16 | 7.61 | 7.44 | 2.10 |
| **4** | **2** | 16 | 5 | 10.50 | 51.97 | 0.23 | 9.79 | 819.41 | 0.01 | 0.50 | 0.49 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 42.50 | 40.27 | 4.65 | 65.58 | 37.23 | 0.93 | 10.69 | 9.77 | 4.20 |
| **2** | **1** | 207 | 3 | 21.50 | 64.77 | 3.72 | 67.02 | 34.30 | 1.00 | 6.91 | 5.91 | 1.10 |
| **2** | **2** | 107 | 2 | 10.50 | 89.14 | 2.65 | 65.46 | 37.48 | 0.92 | 4.25 | 3.33 | 0.40 |
| **3** | **1** | 295 | 4 | 30.50 | 50.24 | 4.12 | 64.52 | 39.50 | 0.85 | 8.65 | 7.79 | 2.20 |
| **4** | **1** | 216 | 6 | 21.50 | 44.52 | 2.67 | 31.85 | 182.56 | 0.10 | 6.28 | 6.18 | 1.90 |
| **4** | **2** | 14 | 5 | 10.50 | 51.71 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:35:27

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

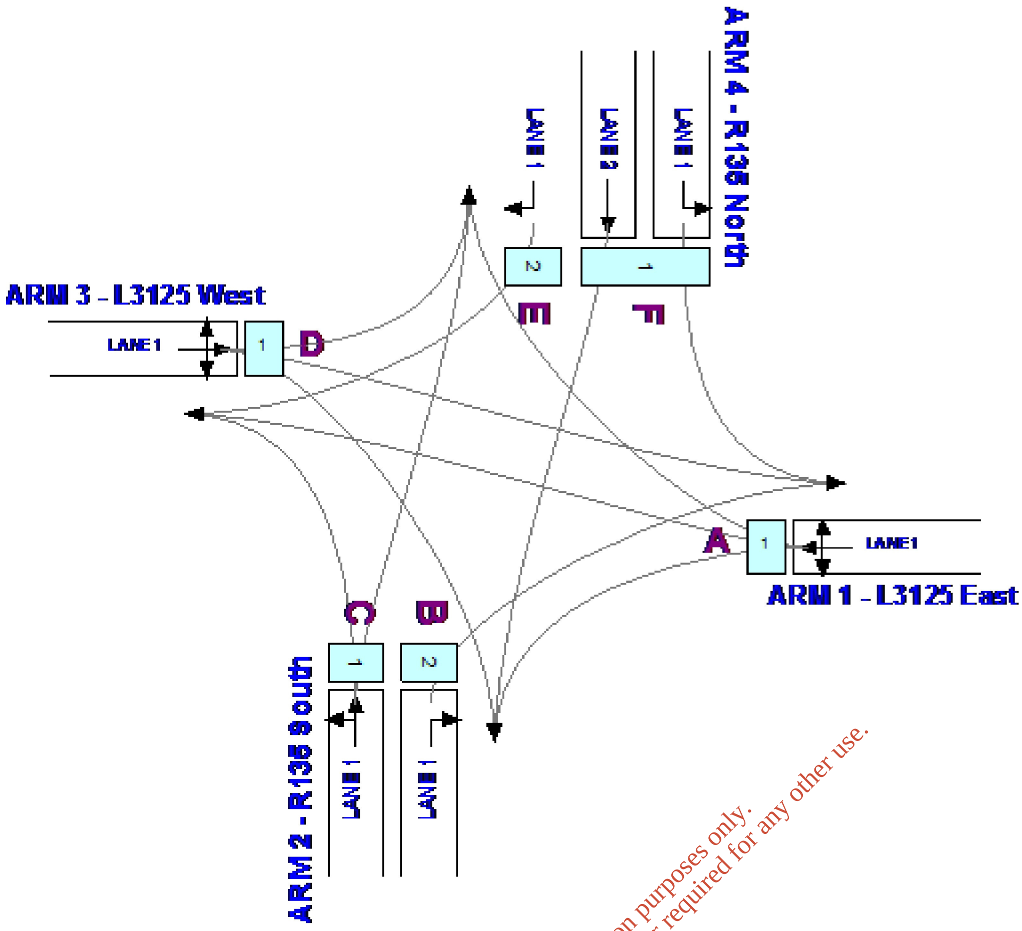
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram




# Signals

## Signals



| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

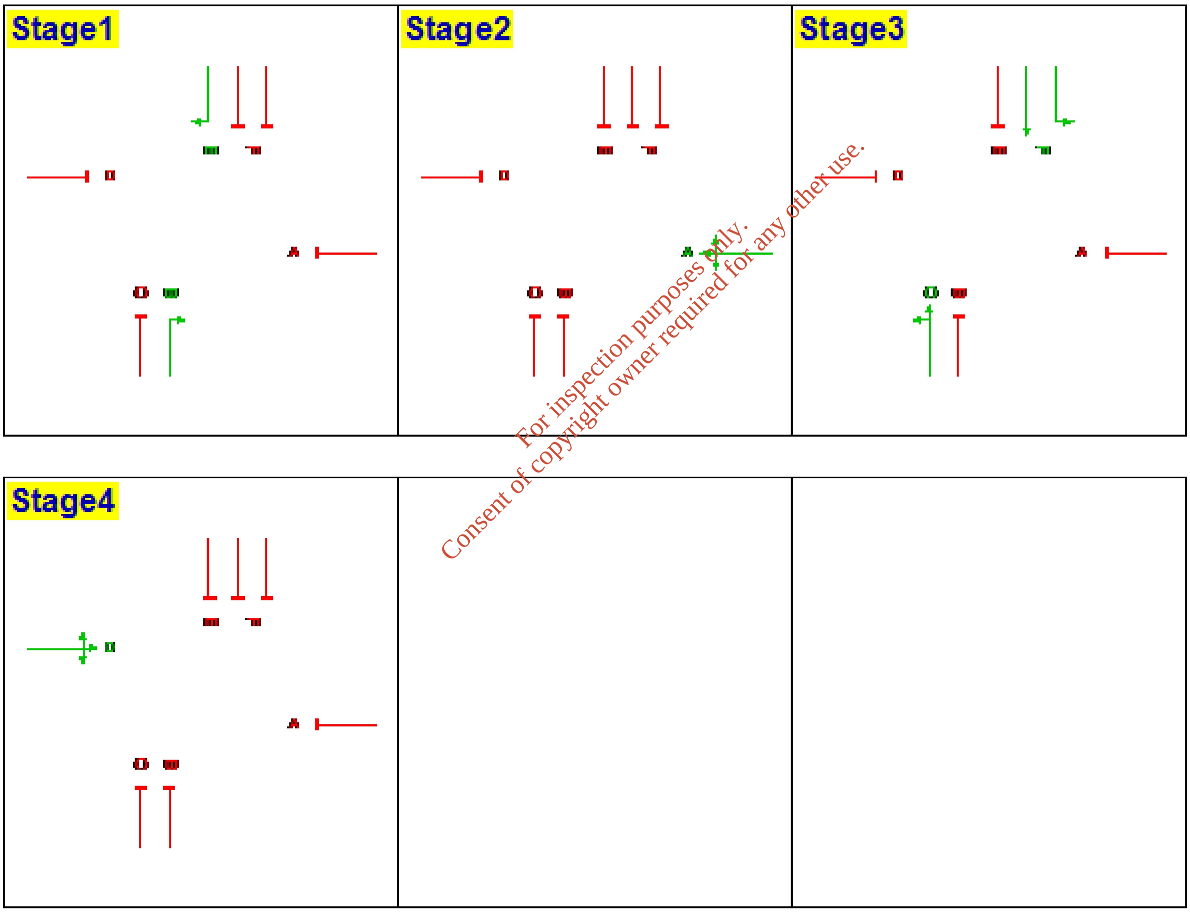
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak With Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2022 PM Peak With Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 96 | 232 | 227 |
| | **Arm 2** | 143 | - | 142 | 135 |
| | **Arm 3** | 188 | 184 | - | 25 |
| | **Arm 4** | 186 | 103 | 19 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 416 | 497 | 609 | 609 | 497 | 416 |
| 2 - R135 South | 1 | C | 208 | 248 | 304 | 304 | 248 | 208 |
| 2 - R135 South | 2 | B | 107 | 128 | 157 | 157 | 128 | 107 |
| 3 - L3125 West | 1 | D | 295 | 352 | 431 | 431 | 352 | 295 |
| 4 - R135 North | 1 | F | 215 | 257 | 314 | 314 | 257 | 215 |
| 4 - R135 North | 2 | E | 14 | 17 | 20 | 20 | 17 | 14 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 60 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 10.87 | 25.77 | 25.77 | 55.9 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -7.65 | 30.05 | 30.05 | 52.90 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

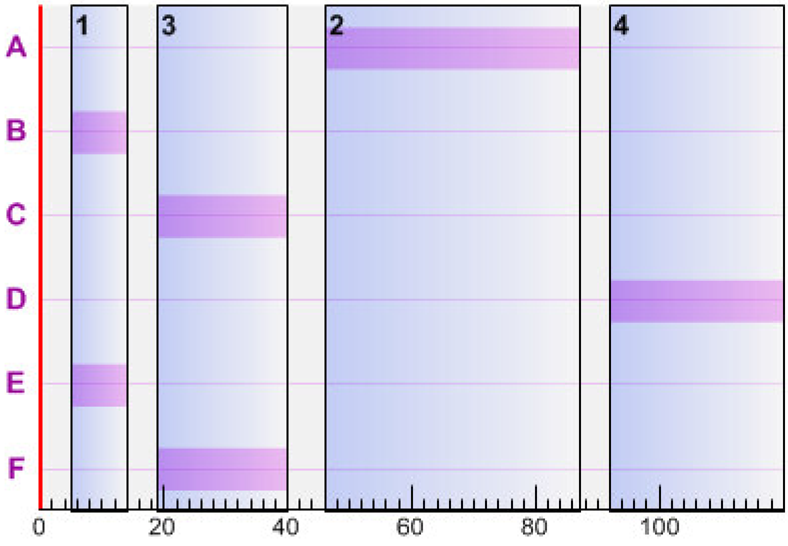
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 21.0 | 40.0 |
| 2 | 46.0 | 41.0 | 87.0 |
| 4 | 92.0 | 28.0 | 0.0 |



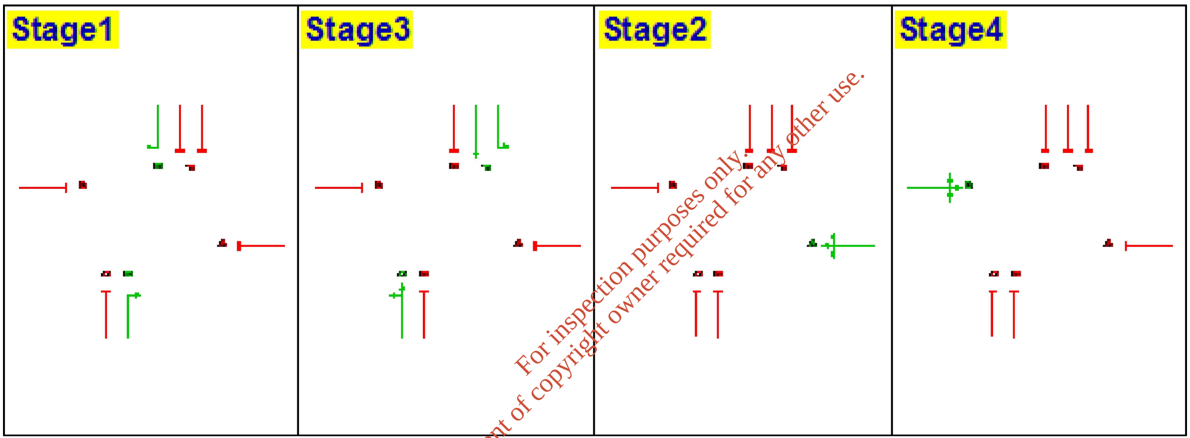
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 46 | 41.0 | 87 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 21.0 | 40 | | | | | | |
| **D** | 92 | 28.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 21.0 | 40 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 507 | A | 42.50 | 49.36 | 6.95 | 79.93 | 12.60 | 2.30 | 14.45 | 12.15 | 21.70 |
| **2** | **1** | 253 | C | 22.50 | 71.56 | 5.03 | 78.27 | 14.99 | 1.91 | 9.13 | 7.22 | 6.90 |
| **2** | **2** | 131 | B | 10.50 | 106.06 | 3.86 | 80.15 | 12.29 | 2.06 | 6.15 | 4.09 | 2.40 |
| **3** | **1** | 359 | D | 29.50 | 64.65 | 6.45 | 81.18 | 10.87 | 2.42 | 12.15 | 9.72 | 10.90 |
| **4** | **1** | 262 | F | 22.50 | 44.51 | 3.24 | 36.92 | 143.79 | 0.15 | 7.64 | 7.49 | 13.40 |
| **4** | **2** | 17 | E | 10.50 | 52.10 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 42.50 | 39.33 | 4.54 | 65.58 | 37.23 | 0.87 | 10.64 | 9.77 | 4.20 |
| **2** | **1** | 208 | 3 | 22.50 | 57.04 | 3.30 | 64.35 | 39.87 | 0.76 | 6.64 | 5.88 | 1.20 |
| **2** | **2** | 107 | 2 | 10.50 | 75.67 | 2.25 | 65.46 | 37.48 | 0.75 | 4.08 | 3.33 | 0.40 |
| **3** | **1** | 295 | 4 | 29.50 | 50.68 | 4.15 | 66.70 | 34.92 | 0.90 | 8.78 | 7.88 | 2.10 |
| **4** | **1** | 215 | 6 | 22.50 | 43.44 | 2.59 | 30.30 | 197.08 | 0.09 | 6.18 | 6.08 | 2.00 |
| **4** | **2** | 14 | 5 | 10.50 | 51.69 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 42.50 | 47.06 | 6.50 | 78.35 | 14.87 | 1.93 | 13.81 | 11.88 | 3.70 |
| **2** | **1** | 248 | 3 | 22.50 | 67.45 | 4.65 | 76.72 | 17.31 | 1.56 | 8.63 | 7.07 | 1.20 |
| **2** | **2** | 128 | 2 | 10.50 | 94.15 | 3.35 | 78.31 | 14.93 | 1.52 | 5.52 | 4.00 | 0.40 |
| **3** | **1** | 352 | 4 | 29.50 | 60.76 | 5.94 | 79.59 | 13.08 | 1.97 | 11.48 | 9.52 | 1.90 |
| **4** | **1** | 257 | 6 | 22.50 | 44.39 | 3.17 | 36.21 | 148.53 | 0.14 | 7.48 | 7.34 | 2.20 |
| **4** | **2** | 17 | 5 | 10.50 | 52.09 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 609 | 1 | 42.50 | 72.29 | 12.23 | 96.01 | -6.26 | 7.82 | 22.75 | 14.93 | 2.10 |
| **2** | **1** | 304 | 3 | 22.50 | 95.67 | 8.08 | 94.04 | -4.30 | 4.92 | 13.69 | 8.77 | 0.90 |
| **2** | **2** | 157 | 2 | 10.50 | 133.33 | 5.81 | 96.05 | -6.30 | 4.16 | 9.09 | 4.93 | 0.40 |
| **3** | **1** | 431 | 4 | 29.50 | 91.53 | 10.96 | 97.46 | -7.65 | 7.38 | 19.24 | 11.86 | 1.20 |
| **4** | **1** | 314 | 6 | 22.50 | 45.83 | 4.00 | 44.24 | 103.41 | 0.25 | 9.32 | 9.07 | 2.50 |
| **4** | **2** | 20 | 5 | 10.50 | 52.52 | 0.29 | 12.24 | 635.52 | 0.01 | 0.62 | 0.61 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 609 | 1 | 42.50 | 87.90 | 14.87 | 96.01 | -6.26 | 9.48 | 24.41 | 14.93 | 2.00 |
| **2** | **1** | 304 | 3 | 22.50 | 115.03 | 9.71 | 94.04 | -4.30 | 5.92 | 14.68 | 8.77 | 0.90 |
| **2** | **2** | 157 | 2 | 10.50 | 169.38 | 7.39 | 96.05 | -6.30 | 5.27 | 10.20 | 4.93 | 0.40 |
| **3** | **1** | 431 | 4 | 29.50 | 115.61 | 13.84 | 97.46 | -7.65 | 9.39 | 21.24 | 11.86 | 1.10 |
| **4** | **1** | 314 | 6 | 22.50 | 45.85 | 4.00 | 44.24 | 103.41 | 0.25 | 9.32 | 9.07 | 2.50 |
| **4** | **2** | 20 | 5 | 10.50 | 52.52 | 0.29 | 12.24 | 635.52 | 0.01 | 0.62 | 0.61 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 42.50 | 56.04 | 7.74 | 78.35 | 14.87 | 2.25 | 14.13 | 11.88 | 3.60 |
| **2** | **1** | 248 | 3 | 22.50 | 84.27 | 5.80 | 76.72 | 17.31 | 1.98 | 9.04 | 7.07 | 1.10 |
| **2** | **2** | 128 | 2 | 10.50 | 144.60 | 5.14 | 78.31 | 14.93 | 2.36 | 6.36 | 4.00 | 0.40 |
| **3** | **1** | 352 | 4 | 29.50 | 81.15 | 7.94 | 79.59 | 13.08 | 2.49 | 12.01 | 9.52 | 1.80 |
| **4** | **1** | 257 | 6 | 22.50 | 44.41 | 3.17 | 36.21 | 148.53 | 0.14 | 7.48 | 7.34 | 2.20 |
| **4** | **2** | 17 | 5 | 10.50 | 52.11 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 42.50 | 40.27 | 4.65 | 65.58 | 37.23 | 0.93 | 10.69 | 9.77 | 4.20 |
| **2** | **1** | 208 | 3 | 22.50 | 60.06 | 3.47 | 64.35 | 39.87 | 0.84 | 6.72 | 5.88 | 1.20 |
| **2** | **2** | 107 | 2 | 10.50 | 89.98 | 2.67 | 65.46 | 37.48 | 0.92 | 4.25 | 3.33 | 0.40 |
| **3** | **1** | 295 | 4 | 29.50 | 52.97 | 4.34 | 66.70 | 34.92 | 0.98 | 8.86 | 7.88 | 2.10 |
| **4** | **1** | 215 | 6 | 22.50 | 43.45 | 2.60 | 30.30 | 197.08 | 0.09 | 6.18 | 6.08 | 2.00 |
| **4** | **2** | 14 | 5 | 10.50 | 51.71 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

| OSCADY PRO | | |
|---|---|---|
| GUI Version: 1.3.1 [05/05/11]<br>Analysis Program Version: v1.3 23/03/2009 | | |



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:04:29

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

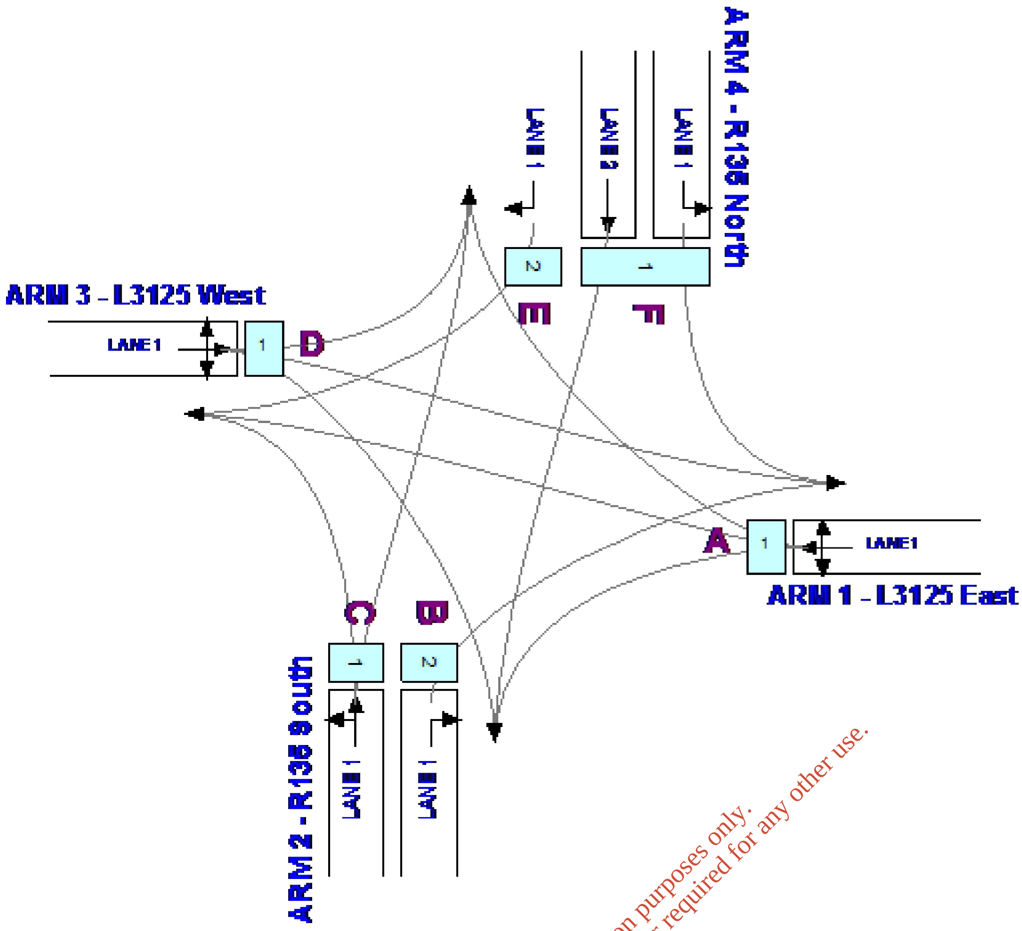
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

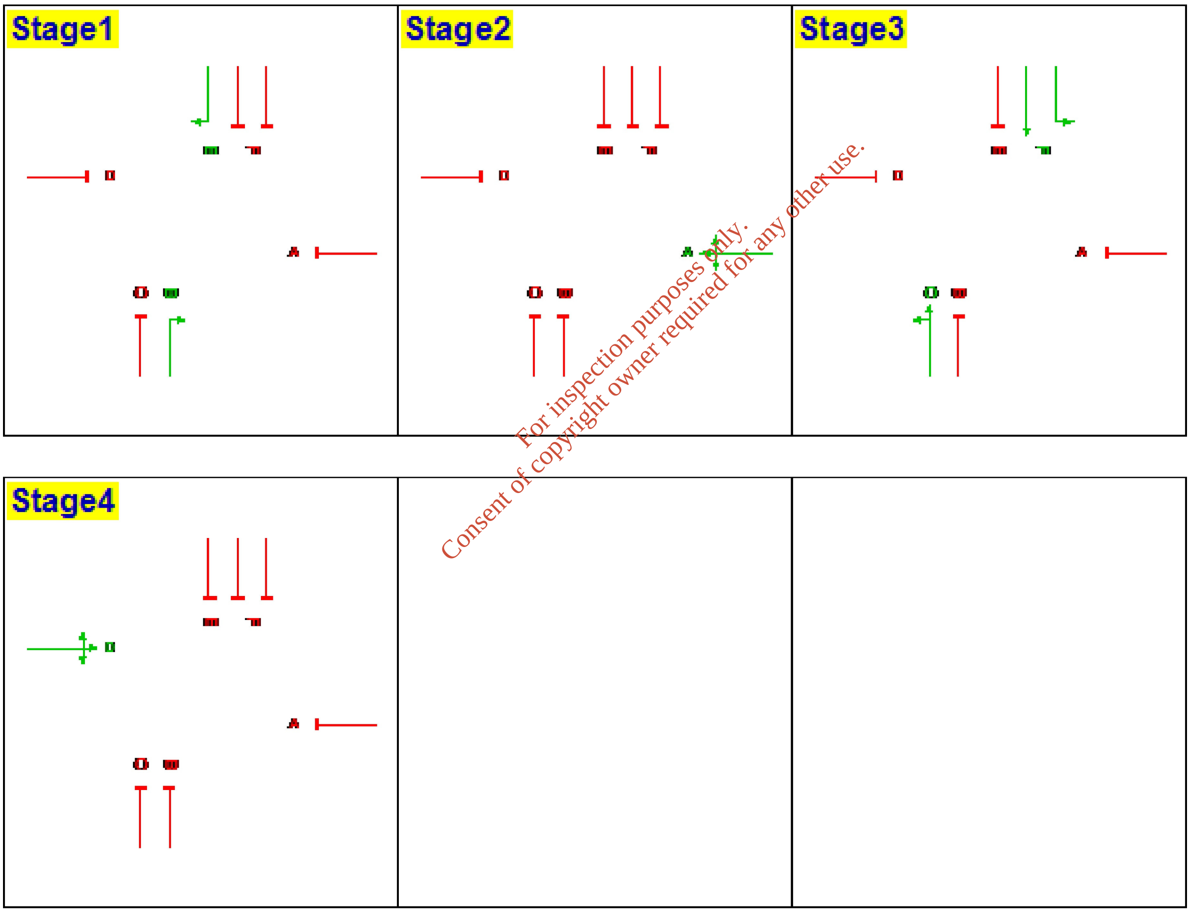
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak Sen | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2022 PM Peak Sen

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 96 | 232 | 227 |
| | **Arm 2** | 143 | - | 142 | 156 |
| | **Arm 3** | 188 | 184 | - | 25 |
| | **Arm 4** | 186 | 125 | 19 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 416 | 497 | 609 | 609 | 497 | 416 |
| 2 - R135 South | 1 | C | 222 | 265 | 324 | 324 | 265 | 222 |
| 2 - R135 South | 2 | B | 106 | 126 | 155 | 155 | 126 | 106 |
| 3 - L3125 West | 1 | D | 295 | 352 | 431 | 431 | 352 | 295 |
| 4 - R135 North | 1 | F | 233 | 278 | 340 | 340 | 278 | 233 |
| 4 - R135 North | 2 | E | 15 | 18 | 22 | 22 | 18 | 15 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 32 | 35 | 32 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 56 | 38 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 3.17 | 27.54 | 27.54 | 56.7 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -14.13 | 32.53 | 32.53 | 53.10 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

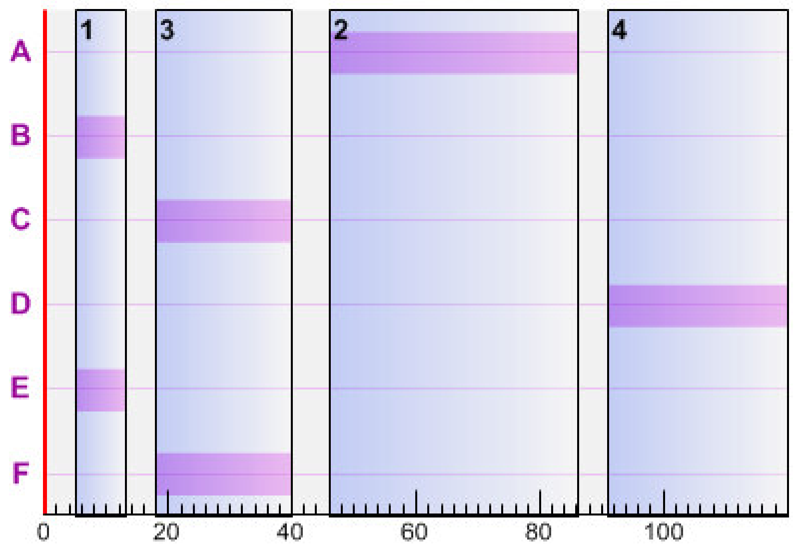
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 8.0 | 13.0 |
| 3 | 18.0 | 22.0 | 40.0 |
| 2 | 46.0 | 40.0 | 86.0 |
| 4 | 91.0 | 29.0 | 0.0 |

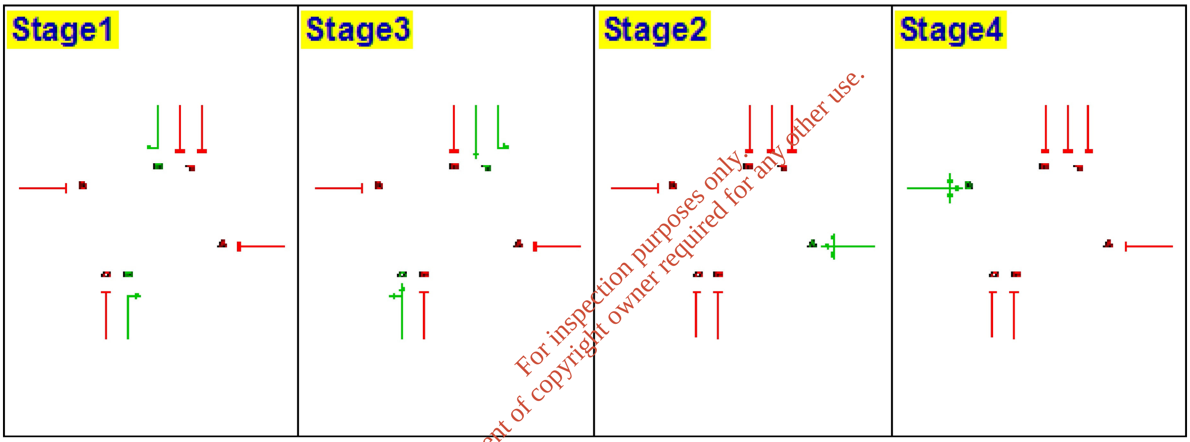
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 46 | 40.0 | 86 | | | | | | |
| **B** | 5 | 8.0 | 13 | | | | | | |
| **C** | 18 | 22.0 | 40 | | | | | | |
| **D** | 91 | 29.0 | 0 | | | | | | |
| **E** | 5 | 8.0 | 13 | | | | | | |
| **F** | 18 | 22.0 | 40 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 507 | A | 41.50 | 52.44 | 7.39 | 81.86 | 9.95 | 2.66 | 14.96 | 12.30 | 20.00 |
| **2** | **1** | 270 | C | 23.50 | 72.52 | 5.44 | 79.97 | 12.54 | 2.16 | 9.81 | 7.65 | 7.20 |
| **2** | **2** | 129 | B | 9.50 | 139.44 | 5.00 | 87.23 | 3.17 | 3.48 | 7.54 | 4.06 | 2.10 |
| **3** | **1** | 359 | D | 30.50 | 59.98 | 5.98 | 78.51 | 14.63 | 2.00 | 11.62 | 9.62 | 12.00 |
| **4** | **1** | 284 | F | 23.50 | 43.94 | 3.47 | 38.31 | 134.90 | 0.17 | 8.24 | 8.07 | 14.80 |
| **4** | **2** | 18 | E | 9.50 | 53.59 | 0.27 | 12.17 | 639.42 | 0.01 | 0.57 | 0.55 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 41.50 | 40.79 | 4.71 | 67.16 | 34.00 | 0.96 | 10.85 | 9.89 | 4.00 |
| **2** | **1** | 222 | 3 | 23.50 | 56.70 | 3.50 | 65.76 | 36.87 | 0.82 | 7.05 | 6.23 | 1.30 |
| **2** | **2** | 106 | 2 | 9.50 | 84.18 | 2.48 | 71.68 | 25.56 | 1.03 | 4.36 | 3.32 | 0.40 |
| **3** | **1** | 295 | 4 | 30.50 | 48.69 | 3.99 | 64.52 | 39.50 | 0.79 | 8.59 | 7.79 | 2.20 |
| **4** | **1** | 233 | 6 | 23.50 | 42.80 | 2.77 | 31.43 | 186.31 | 0.10 | 6.65 | 6.55 | 2.20 |
| **4** | **2** | 15 | 5 | 9.50 | 53.09 | 0.22 | 10.14 | 787.30 | 0.01 | 0.47 | 0.46 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 41.50 | 49.52 | 6.84 | 80.24 | 12.16 | 2.18 | 14.21 | 12.03 | 3.40 |
| **2** | **1** | 265 | 3 | 23.50 | 67.94 | 5.00 | 78.49 | 14.66 | 1.75 | 9.25 | 7.50 | 1.20 |
| **2** | **2** | 126 | 2 | 9.50 | 111.92 | 3.92 | 85.20 | 5.63 | 2.19 | 6.16 | 3.97 | 0.30 |
| **3** | **1** | 352 | 4 | 30.50 | 57.19 | 5.59 | 76.98 | 16.91 | 1.67 | 11.09 | 9.41 | 2.00 |
| **4** | **1** | 278 | 6 | 23.50 | 43.79 | 3.38 | 37.51 | 139.97 | 0.16 | 8.05 | 7.89 | 2.40 |
| **4** | **2** | 18 | 5 | 9.50 | 53.60 | 0.27 | 12.17 | 639.42 | 0.01 | 0.57 | 0.55 | 0.10 |

## Traffic Stream Details (17:00-17:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 609 | 1 | 41.50 | 79.19 | 13.40 | 98.32 | -8.46 | 9.57 | 24.69 | 15.12 | 1.70 |
| **2** | **1** | 324 | 3 | 23.50 | 98.73 | 8.89 | 95.97 | -6.22 | 5.77 | 15.06 | 9.29 | 0.90 |
| **2** | **2** | 155 | 2 | 9.50 | 165.01 | 7.10 | 104.81 | -14.13 | 6.31 | 11.00 | 4.68 | 0.30 |
| **3** | **1** | 431 | 4 | 30.50 | 82.25 | 9.85 | 94.26 | -4.52 | 5.78 | 17.51 | 11.73 | 1.40 |
| **4** | **1** | 340 | 6 | 23.50 | 45.32 | 4.28 | 45.87 | 96.21 | 0.27 | 10.05 | 9.78 | 2.70 |
| **4** | **2** | 22 | 5 | 9.50 | 54.27 | 0.33 | 14.88 | 504.98 | 0.02 | 0.70 | 0.68 | 0.10 |



## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 609 | 1 | 41.50 | 101.75 | 17.21 | 98.32 | -8.46 | 12.35 | 27.47 | 15.12 | 1.60 |
| **2** | **1** | 324 | 3 | 23.50 | 122.26 | 11.00 | 95.97 | -6.22 | 7.17 | 16.46 | 9.29 | 0.90 |
| **2** | **2** | 155 | 2 | 9.50 | 233.76 | 10.06 | 104.81 | -14.13 | 8.92 | 13.60 | 4.68 | 0.30 |
| **3** | **1** | 431 | 4 | 30.50 | 97.56 | 11.68 | 94.26 | -4.52 | 6.86 | 18.58 | 11.73 | 1.30 |
| **4** | **1** | 340 | 6 | 23.50 | 45.34 | 4.28 | 45.87 | 96.21 | 0.27 | 10.05 | 9.78 | 2.70 |
| **4** | **2** | 22 | 5 | 9.50 | 54.30 | 0.33 | 14.88 | 504.98 | 0.02 | 0.70 | 0.68 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 41.50 | 65.32 | 9.02 | 80.24 | 12.16 | 2.64 | 14.67 | 12.03 | 3.30 |
| **2** | **1** | 265 | 3 | 23.50 | 90.00 | 6.63 | 78.49 | 14.66 | 2.28 | 9.78 | 7.50 | 1.20 |
| **2** | **2** | 126 | 2 | 9.50 | 244.70 | 8.56 | 85.20 | 5.63 | 4.71 | 8.68 | 3.97 | 0.30 |
| **3** | **1** | 352 | 4 | 30.50 | 67.69 | 6.62 | 76.98 | 16.91 | 2.00 | 11.42 | 9.41 | 2.00 |
| **4** | **1** | 278 | 6 | 23.50 | 43.81 | 3.38 | 37.51 | 139.97 | 0.16 | 8.05 | 7.89 | 2.40 |
| **4** | **2** | 18 | 5 | 9.50 | 53.62 | 0.27 | 12.17 | 639.42 | 0.01 | 0.57 | 0.55 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 416 | 1 | 41.50 | 42.04 | 4.86 | 67.16 | 34.00 | 1.02 | 10.92 | 9.89 | 4.00 |
| **2** | **1** | 222 | 3 | 23.50 | 60.12 | 3.71 | 65.76 | 36.87 | 0.92 | 7.15 | 6.23 | 1.30 |
| **2** | **2** | 106 | 2 | 9.50 | 134.33 | 3.96 | 71.68 | 25.56 | 1.44 | 4.77 | 3.32 | 0.40 |
| **3** | **1** | 295 | 4 | 30.50 | 50.24 | 4.12 | 64.52 | 39.50 | 0.85 | 8.65 | 7.79 | 2.20 |
| **4** | **1** | 233 | 6 | 23.50 | 42.82 | 2.77 | 31.43 | 186.31 | 0.10 | 6.65 | 6.55 | 2.20 |
| **4** | **2** | 15 | 5 | 9.50 | 53.11 | 0.22 | 10.14 | 787.30 | 0.01 | 0.47 | 0.46 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:12:12

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |

## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |



# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

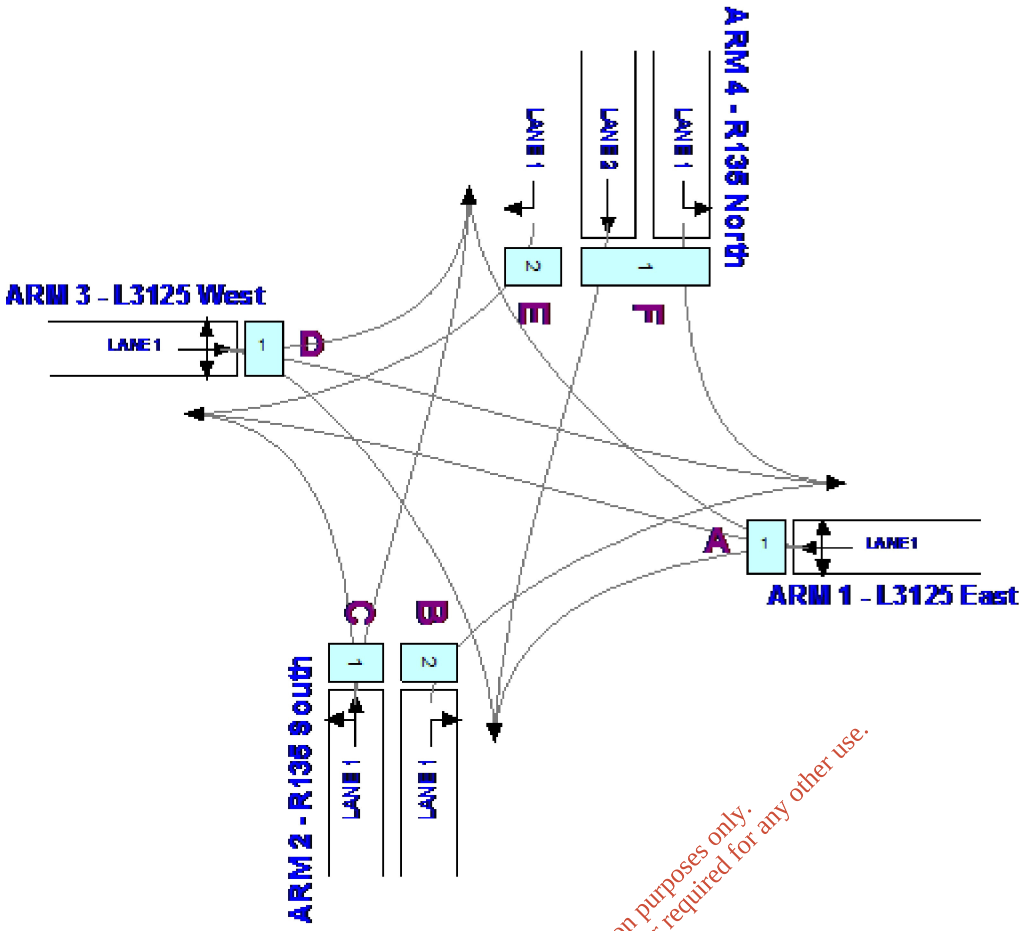
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

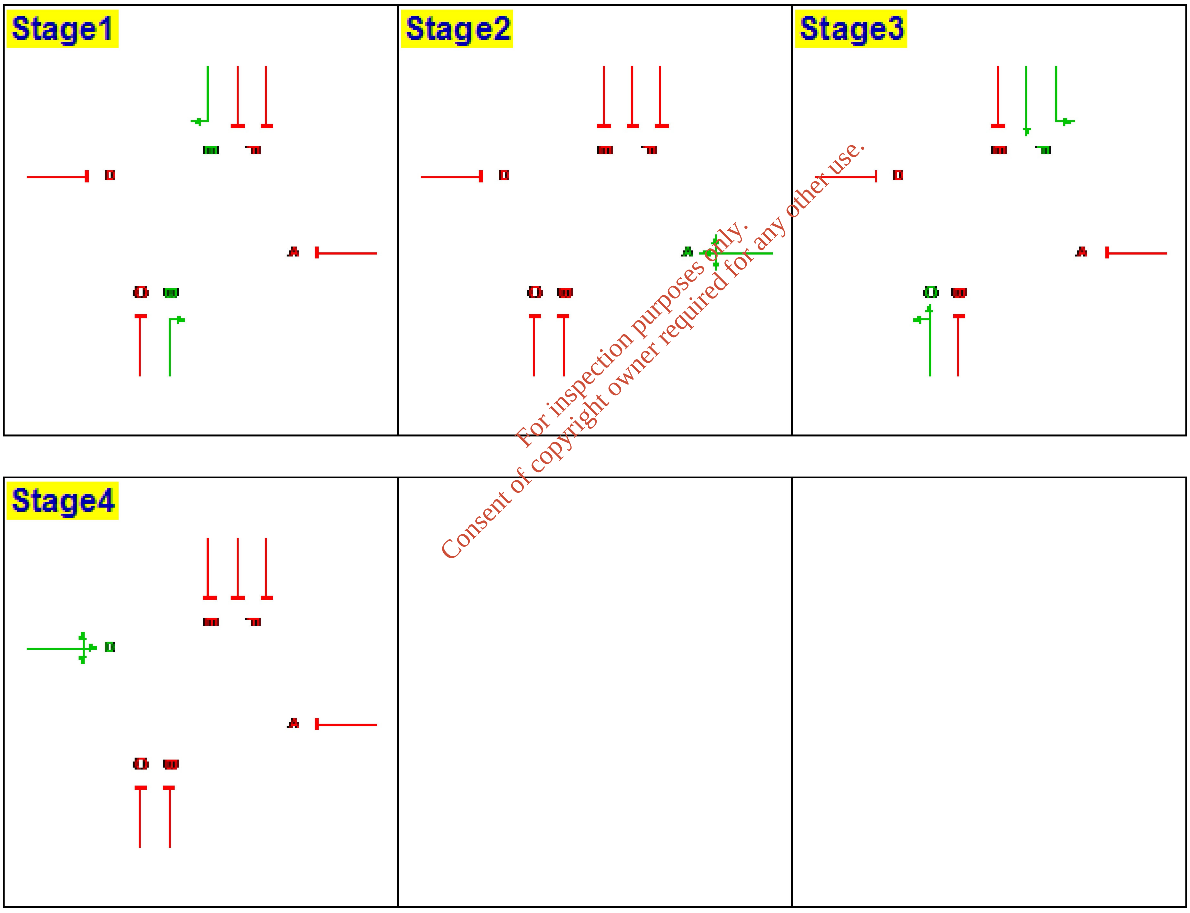
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| From | A | - | 5 | 5 | 5 | 5 | 5 |
| | B | 6 | - | 5 | 6 | | 5 |
| | C | 6 | 5 | - | 6 | 5 | |
| | D | 5 | 5 | 5 | - | 5 | 5 |
| | E | 6 | | 5 | 6 | - | 5 |
| | F | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| 1 | -1 | B,E | Yes |
| 2 | -1 | A | Yes |
| 3 | -1 | C,F | Yes |
| 4 | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak + Link | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2022 PM Peak + Link

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 99 | 232 | 114 |
| | **Arm 2** | 143 | - | 142 | 135 |
| | **Arm 3** | 188 | 184 | - | 25 |
| | **Arm 4** | 92 | 103 | 19 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 334 | 399 | 488 | 488 | 399 | 334 |
| 2 - R135 South | 1 | C | 208 | 248 | 304 | 304 | 248 | 208 |
| 2 - R135 South | 2 | B | 107 | 128 | 157 | 157 | 128 | 107 |
| 3 - L3125 West | 1 | D | 295 | 352 | 431 | 431 | 352 | 295 |
| 4 - R135 North | 1 | F | 146 | 174 | 214 | 214 | 174 | 146 |
| 4 - R135 North | 2 | E | 14 | 17 | 21 | 21 | 17 | 14 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 22 | 52 | 26 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 43 | 48 | 9 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 20.10 | 20.79 | 20.79 | 54.7 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -0.05 | 22.66 | 22.66 | 51.90 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

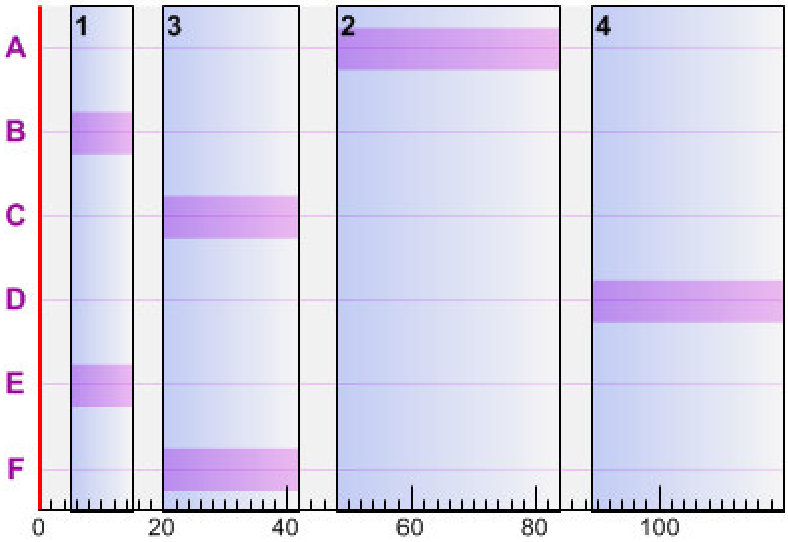
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 10.0 | 15.0 |
| 3 | 20.0 | 22.0 | 42.0 |
| 2 | 48.0 | 36.0 | 84.0 |
| 4 | 89.0 | 31.0 | 0.0 |

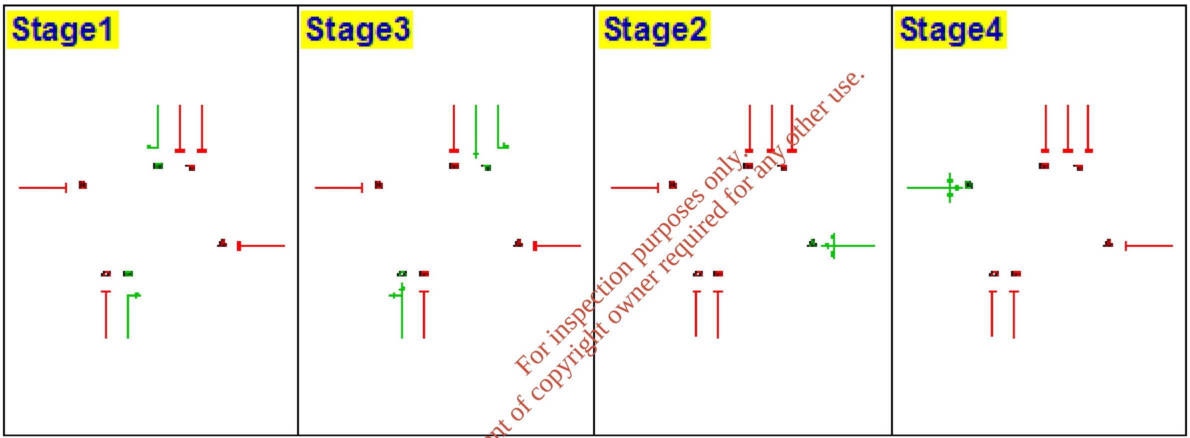
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 48 | 36.0 | 84 | | | | | | |
| **B** | 5 | 10.0 | 15 | | | | | | |
| **C** | 20 | 22.0 | 42 | | | | | | |
| **D** | 89 | 31.0 | 0 | | | | | | |
| **E** | 5 | 10.0 | 15 | | | | | | |
| **F** | 20 | 22.0 | 42 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 407 | A | 37.50 | 47.80 | 5.40 | 72.72 | 23.76 | 1.38 | 11.53 | 10.15 | 18.80 |
| **2** | **1** | 253 | C | 23.50 | 65.75 | 4.62 | 74.94 | 20.10 | 1.53 | 8.67 | 7.14 | 7.60 |
| **2** | **2** | 131 | B | 11.50 | 86.87 | 3.16 | 73.18 | 22.99 | 1.31 | 5.37 | 4.05 | 2.80 |
| **3** | **1** | 359 | D | 32.50 | 53.19 | 5.30 | 73.68 | 22.15 | 1.45 | 10.85 | 9.40 | 14.20 |
| **4** | **1** | 178 | F | 23.50 | 41.73 | 2.06 | 24.01 | 274.78 | 0.05 | 5.00 | 4.95 | 10.60 |
| **4** | **2** | 17 | E | 11.50 | 50.89 | 0.24 | 9.50 | 847.74 | 0.01 | 0.52 | 0.51 | 0.70 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 334 | 1 | 37.50 | 40.86 | 3.79 | 59.68 | 50.81 | 0.61 | 8.81 | 8.20 | 3.30 |
| **2** | **1** | 208 | 3 | 23.50 | 54.52 | 3.15 | 61.61 | 46.08 | 0.65 | 6.47 | 5.82 | 1.30 |
| **2** | **2** | 107 | 2 | 11.50 | 69.29 | 2.06 | 59.77 | 50.57 | 0.56 | 3.85 | 3.30 | 0.40 |
| **3** | **1** | 295 | 4 | 32.50 | 45.24 | 3.71 | 60.55 | 48.65 | 0.63 | 8.25 | 7.62 | 2.50 |
| **4** | **1** | 146 | 6 | 23.50 | 41.14 | 1.67 | 19.70 | 356.92 | 0.03 | 4.06 | 4.03 | 1.50 |
| **4** | **2** | 14 | 5 | 11.50 | 50.54 | 0.20 | 7.82 | 9999.00 | 0.00 | 0.43 | 0.42 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 399 | 1 | 37.50 | 46.49 | 5.15 | 71.29 | 26.25 | 1.21 | 11.15 | 9.94 | 3.20 |
| **2** | **1** | 248 | 3 | 23.50 | 62.97 | 4.34 | 73.46 | 22.52 | 1.29 | 8.29 | 6.99 | 1.30 |
| **2** | **2** | 128 | 2 | 11.50 | 81.45 | 2.90 | 71.50 | 25.87 | 1.06 | 5.02 | 3.96 | 0.50 |
| **3** | **1** | 352 | 4 | 32.50 | 51.56 | 5.04 | 72.25 | 24.58 | 1.26 | 10.46 | 9.20 | 2.40 |
| **4** | **1** | 174 | 6 | 23.50 | 41.65 | 2.01 | 23.47 | 283.39 | 0.05 | 4.88 | 4.83 | 1.70 |
| **4** | **2** | 17 | 5 | 11.50 | 50.89 | 0.24 | 9.50 | 847.74 | 0.01 | 0.52 | 0.51 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 488 | 1 | 37.50 | 61.11 | 8.28 | 87.19 | 3.22 | 3.52 | 15.92 | 12.39 | 2.40 |
| **2** | **1** | 304 | 3 | 23.50 | 85.09 | 7.19 | 90.04 | -0.05 | 3.76 | 12.43 | 8.68 | 1.00 |
| **2** | **2** | 157 | 2 | 11.50 | 107.45 | 4.69 | 87.70 | 2.62 | 2.65 | 7.54 | 4.89 | 0.40 |
| **3** | **1** | 431 | 4 | 32.50 | 68.47 | 8.20 | 88.46 | 1.74 | 3.74 | 15.20 | 11.46 | 1.80 |
| **4** | **1** | 214 | 6 | 23.50 | 42.42 | 2.52 | 28.87 | 211.73 | 0.08 | 6.07 | 5.99 | 2.00 |
| **4** | **2** | 21 | 5 | 11.50 | 51.37 | 0.30 | 11.73 | 667.21 | 0.01 | 0.65 | 0.64 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 488 | 1 | 37.50 | 65.27 | 8.85 | 87.19 | 3.22 | 3.76 | 16.15 | 12.39 | 2.40 |
| **2** | **1** | 304 | 3 | 23.50 | 96.41 | 8.14 | 90.04 | -0.05 | 4.25 | 12.92 | 8.68 | 1.00 |
| **2** | **2** | 157 | 2 | 11.50 | 123.47 | 5.38 | 87.70 | 2.62 | 3.03 | 7.92 | 4.89 | 0.40 |
| **3** | **1** | 431 | 4 | 32.50 | 74.52 | 8.92 | 88.46 | 1.74 | 4.06 | 15.52 | 11.46 | 1.80 |
| **4** | **1** | 214 | 6 | 23.50 | 42.43 | 2.52 | 28.87 | 211.73 | 0.08 | 6.07 | 5.99 | 2.00 |
| **4** | **2** | 21 | 5 | 11.50 | 51.37 | 0.30 | 11.73 | 667.21 | 0.01 | 0.65 | 0.64 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 399 | 1 | 37.50 | 48.82 | 5.41 | 71.29 | 26.25 | 1.33 | 11.27 | 9.94 | 3.10 |
| **2** | **1** | 248 | 3 | 23.50 | 71.43 | 4.92 | 73.46 | 22.52 | 1.54 | 8.54 | 6.99 | 1.30 |
| **2** | **2** | 128 | 2 | 11.50 | 98.02 | 3.49 | 71.50 | 25.87 | 1.38 | 5.34 | 3.96 | 0.50 |
| **3** | **1** | 352 | 4 | 32.50 | 55.15 | 5.39 | 72.25 | 24.58 | 1.42 | 10.62 | 9.20 | 2.40 |
| **4** | **1** | 174 | 6 | 23.50 | 41.66 | 2.01 | 23.47 | 283.39 | 0.05 | 4.88 | 4.83 | 1.70 |
| **4** | **2** | 17 | 5 | 11.50 | 50.90 | 0.24 | 9.50 | 847.74 | 0.01 | 0.52 | 0.51 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 334 | 1 | 37.50 | 41.41 | 3.84 | 59.68 | 50.81 | 0.64 | 8.84 | 8.20 | 3.30 |
| **2** | **1** | 208 | 3 | 23.50 | 56.43 | 3.26 | 61.61 | 46.08 | 0.71 | 6.53 | 5.82 | 1.30 |
| **2** | **2** | 107 | 2 | 11.50 | 74.76 | 2.22 | 59.77 | 50.57 | 0.64 | 3.94 | 3.30 | 0.40 |
| **3** | **1** | 295 | 4 | 32.50 | 46.05 | 3.77 | 60.55 | 48.65 | 0.67 | 8.29 | 7.62 | 2.50 |
| **4** | **1** | 146 | 6 | 23.50 | 41.14 | 1.67 | 19.70 | 356.92 | 0.03 | 4.06 | 4.03 | 1.50 |
| **4** | **2** | 14 | 5 | 11.50 | 50.55 | 0.20 | 7.82 | 9999.00 | 0.00 | 0.43 | 0.42 | 0.10 |

| OSCADY PRO |
|---|
| GUI Version: 1.3.1 [05/05/11]<br>Analysis Program Version: v1.3 23/03/2009 |



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk



**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:06:24

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

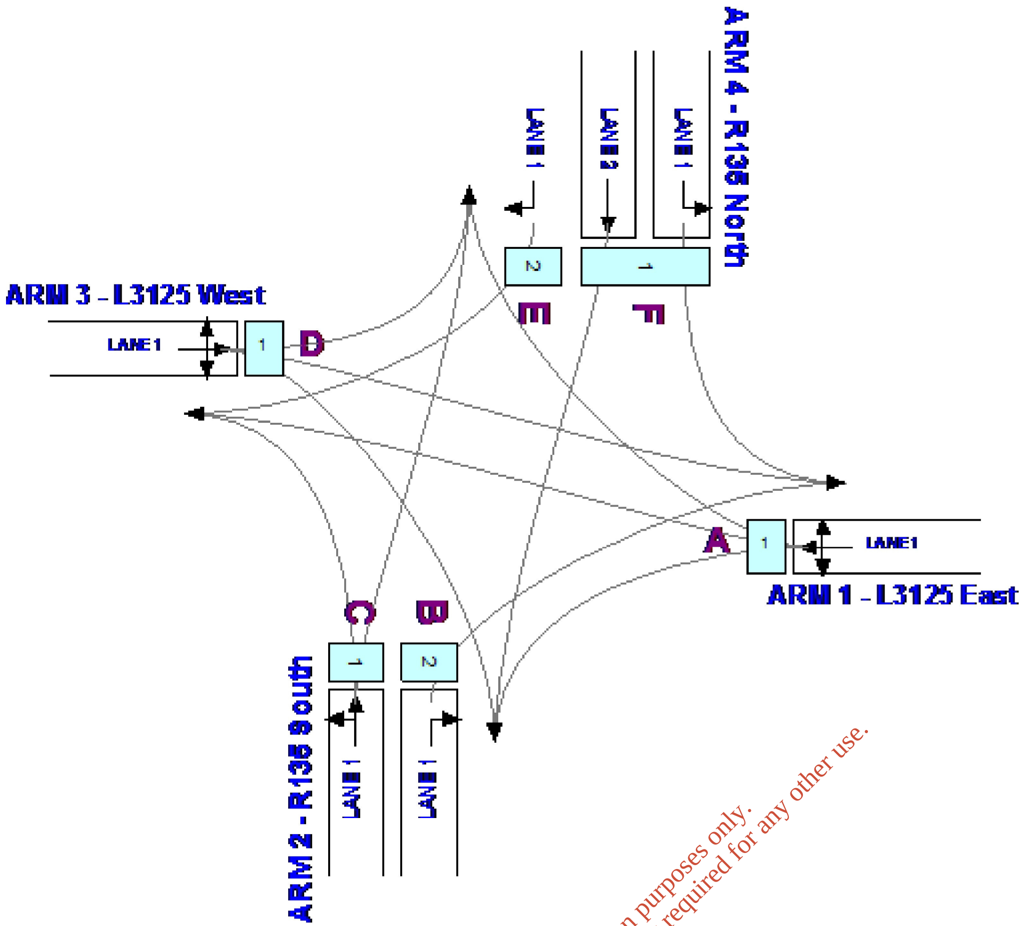
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

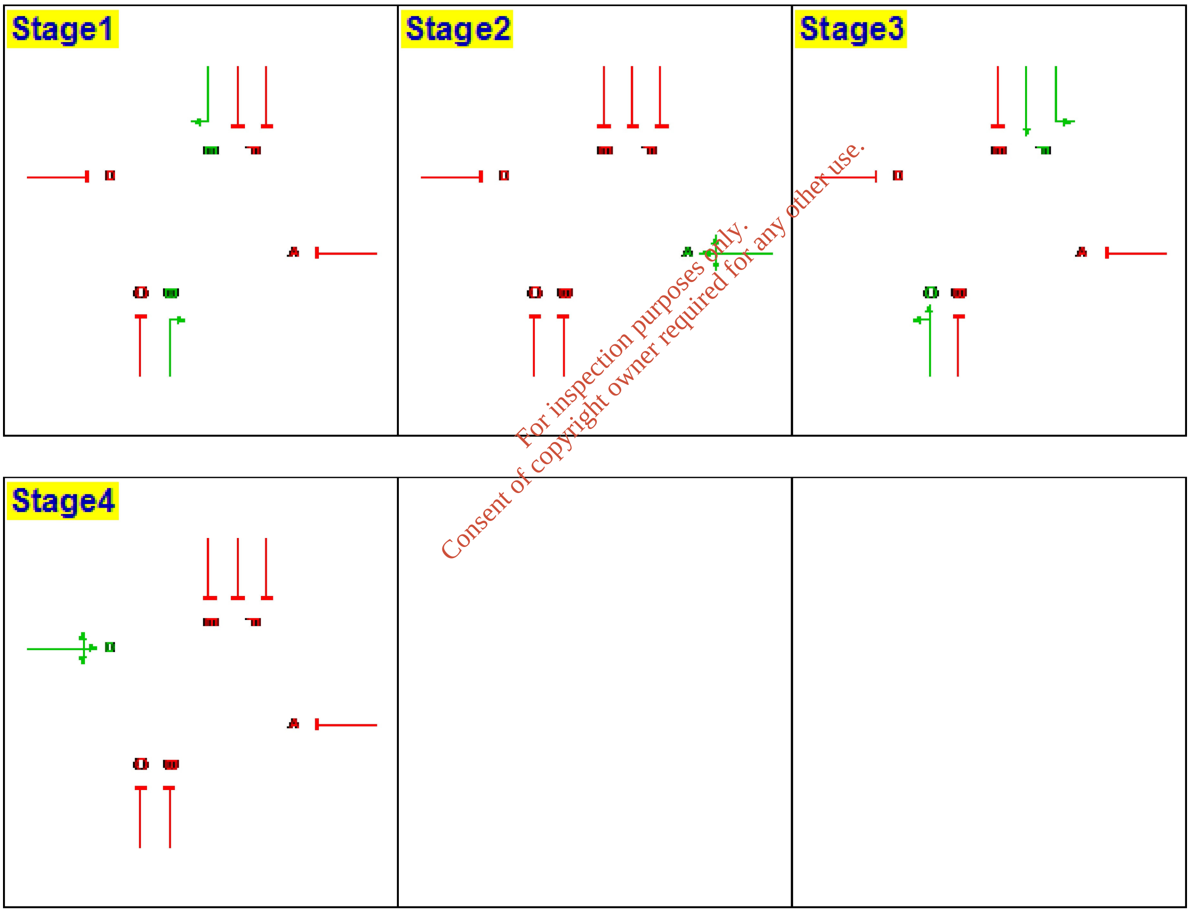
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2032 PM Peak No Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2032 PM Peak No Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 99 | 240 | 235 |
| | **Arm 2** | 148 | - | 147 | 138 |
| | **Arm 3** | 194 | 190 | - | 26 |
| | **Arm 4** | 192 | 105 | 20 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 431 | 514 | 630 | 630 | 514 | 431 |
| 2 - R135 South | 1 | C | 214 | 256 | 313 | 313 | 256 | 214 |
| 2 - R135 South | 2 | B | 110 | 132 | 161 | 161 | 132 | 110 |
| 3 - L3125 West | 1 | D | 304 | 364 | 445 | 445 | 364 | 304 |
| 4 - R135 North | 1 | F | 223 | 267 | 327 | 327 | 267 | 223 |
| 4 - R135 North | 2 | E | 14 | 17 | 21 | 21 | 17 | 14 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 61 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | -0.68 | 29.24 | 29.24 | 55.1 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -17.33 | 35.40 | 35.40 | 51.50 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

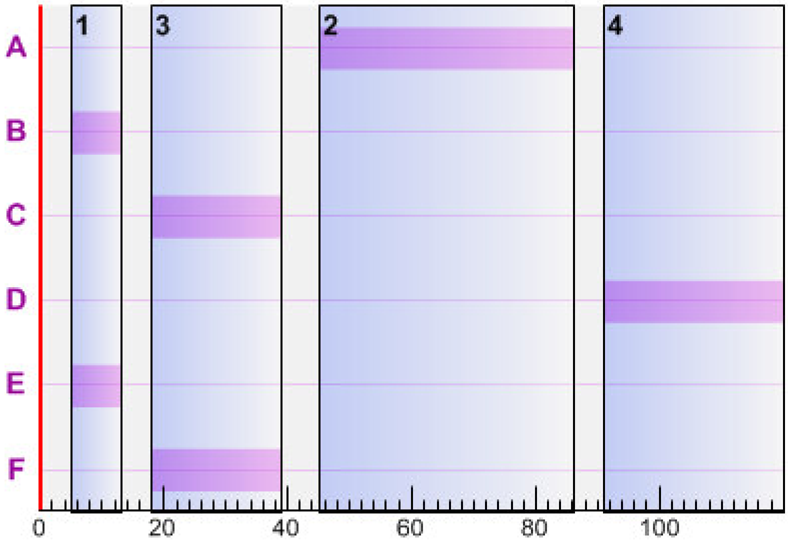
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 8.0 | 13.0 |
| 3 | 18.0 | 21.0 | 39.0 |
| 2 | 45.0 | 41.0 | 86.0 |
| 4 | 91.0 | 29.0 | 0.0 |



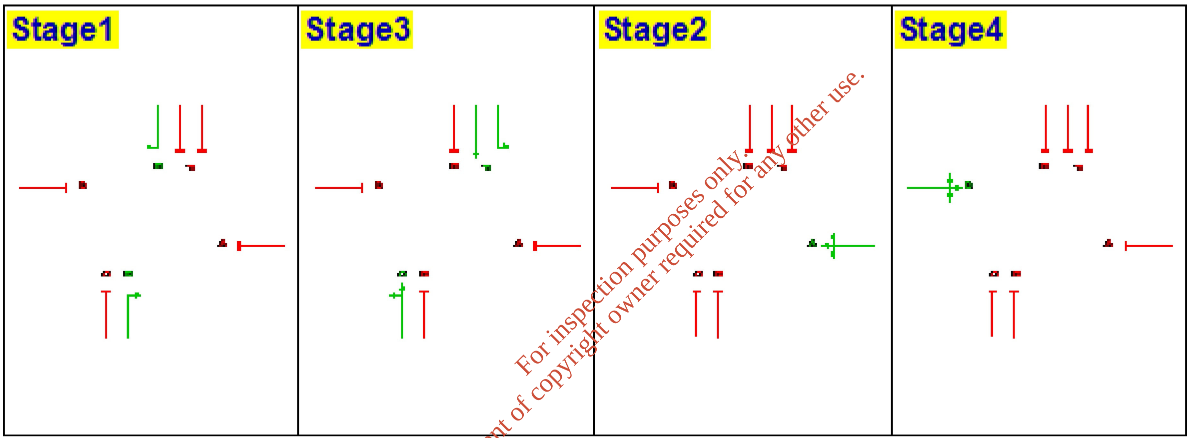
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 45 | 41.0 | 86 | | | | | | |
| **B** | 5 | 8.0 | 13 | | | | | | |
| **C** | 18 | 21.0 | 39 | | | | | | |
| **D** | 91 | 29.0 | 0 | | | | | | |
| **E** | 5 | 8.0 | 13 | | | | | | |
| **F** | 18 | 21.0 | 39 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 525 | A | 42.50 | 52.64 | 7.68 | 82.77 | 8.74 | 2.87 | 15.50 | 12.63 | 20.50 |
| **2** | **1** | 261 | C | 22.50 | 75.54 | 5.48 | 80.74 | 11.47 | 2.28 | 9.74 | 7.46 | 6.70 |
| **2** | **2** | 134 | B | 9.50 | 159.18 | 5.93 | 90.61 | -0.68 | 4.65 | 8.88 | 4.23 | 2.00 |
| **3** | **1** | 371 | D | 30.50 | 63.33 | 6.53 | 81.14 | 10.92 | 2.43 | 12.39 | 9.96 | 11.60 |
| **4** | **1** | 272 | F | 22.50 | 44.75 | 3.38 | 38.33 | 134.82 | 0.17 | 7.96 | 7.79 | 13.70 |
| **4** | **2** | 17 | E | 9.50 | 53.43 | 0.25 | 11.50 | 682.91 | 0.01 | 0.53 | 0.52 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 431 | 1 | 42.50 | 40.38 | 4.83 | 67.95 | 32.46 | 1.00 | 11.16 | 10.15 | 4.20 |
| 2 | 1 | 214 | 3 | 22.50 | 58.09 | 3.45 | 66.20 | 35.95 | 0.84 | 6.90 | 6.05 | 1.20 |
| 2 | 2 | 110 | 2 | 9.50 | 87.08 | 2.66 | 74.38 | 21.00 | 1.19 | 4.64 | 3.45 | 0.40 |
| 3 | 1 | 304 | 4 | 30.50 | 49.64 | 4.19 | 66.49 | 35.37 | 0.89 | 8.93 | 8.05 | 2.20 |
| 4 | 1 | 223 | 6 | 22.50 | 43.61 | 2.70 | 31.42 | 186.42 | 0.10 | 6.42 | 6.32 | 2.00 |
| 4 | 2 | 14 | 5 | 9.50 | 52.93 | 0.21 | 9.47 | 850.68 | 0.01 | 0.44 | 0.43 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 514 | 1 | 42.50 | 49.36 | 7.05 | 81.03 | 11.07 | 2.31 | 14.65 | 12.33 | 3.50 |
| 2 | 1 | 256 | 3 | 22.50 | 70.18 | 4.99 | 79.20 | 13.64 | 1.82 | 9.12 | 7.31 | 1.10 |
| 2 | 2 | 132 | 2 | 9.50 | 121.09 | 4.44 | 89.26 | 0.83 | 2.74 | 6.90 | 4.16 | 0.30 |
| 3 | 1 | 364 | 4 | 30.50 | 59.63 | 6.03 | 79.61 | 13.06 | 1.98 | 11.74 | 9.76 | 2.00 |
| 4 | 1 | 267 | 6 | 22.50 | 44.63 | 3.31 | 37.62 | 139.22 | 0.16 | 7.80 | 7.64 | 2.30 |
| 4 | 2 | 17 | 5 | 9.50 | 53.43 | 0.25 | 11.50 | 682.91 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:00-17:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 630 | 1 | 42.50 | 80.85 | 14.15 | 99.32 | -9.38 | 10.65 | 26.17 | 15.52 | 1.70 |
| 2 | 1 | 313 | 3 | 22.50 | 102.93 | 8.95 | 96.83 | -7.05 | 6.02 | 15.06 | 9.04 | 0.80 |
| 2 | 2 | 161 | 2 | 9.50 | 180.22 | 8.06 | 108.87 | -17.33 | 7.77 | 12.46 | 4.69 | 0.30 |
| 3 | 1 | 445 | 4 | 30.50 | 89.83 | 11.10 | 97.32 | -7.52 | 7.43 | 19.58 | 12.14 | 1.20 |
| 4 | 1 | 327 | 6 | 22.50 | 46.19 | 4.20 | 46.08 | 95.33 | 0.28 | 9.75 | 9.48 | 2.50 |
| 4 | 2 | 21 | 5 | 9.50 | 54.10 | 0.32 | 14.20 | 533.79 | 0.02 | 0.66 | 0.65 | 0.10 |



## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 630 | 1 | 42.50 | 106.56 | 18.65 | 99.32 | -9.38 | 14.14 | 29.66 | 15.52 | 1.50 |
| 2 | 1 | 313 | 3 | 22.50 | 129.52 | 11.26 | 96.83 | -7.05 | 7.61 | 16.65 | 9.04 | 0.80 |
| 2 | 2 | 161 | 2 | 9.50 | 265.22 | 11.86 | 108.87 | -17.33 | 11.35 | 16.04 | 4.69 | 0.30 |
| 3 | 1 | 445 | 4 | 30.50 | 113.04 | 13.97 | 97.32 | -7.52 | 9.42 | 21.56 | 12.14 | 1.20 |
| 4 | 1 | 327 | 6 | 22.50 | 46.21 | 4.20 | 46.08 | 95.33 | 0.28 | 9.75 | 9.48 | 2.50 |
| 4 | 2 | 21 | 5 | 9.50 | 54.10 | 0.32 | 14.20 | 533.79 | 0.02 | 0.66 | 0.65 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 514 | 1 | 42.50 | 68.84 | 9.83 | 81.03 | 11.07 | 2.84 | 15.18 | 12.33 | 3.40 |
| **2** | **1** | 256 | 3 | 22.50 | 97.18 | 6.91 | 79.20 | 13.64 | 2.43 | 9.74 | 7.31 | 1.10 |
| **2** | **2** | 132 | 2 | 9.50 | 304.89 | 11.18 | 89.26 | 0.83 | 7.49 | 11.66 | 4.16 | 0.30 |
| **3** | **1** | 364 | 4 | 30.50 | 78.80 | 7.97 | 79.61 | 13.06 | 2.49 | 12.25 | 9.76 | 1.90 |
| **4** | **1** | 267 | 6 | 22.50 | 44.65 | 3.31 | 37.62 | 139.22 | 0.16 | 7.80 | 7.64 | 2.30 |
| **4** | **2** | 17 | 5 | 9.50 | 53.43 | 0.25 | 11.50 | 682.91 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 431 | 1 | 42.50 | 41.72 | 4.99 | 67.95 | 32.46 | 1.08 | 11.23 | 10.15 | 4.10 |
| **2** | **1** | 214 | 3 | 22.50 | 62.18 | 3.70 | 66.20 | 35.95 | 0.95 | 7.00 | 6.05 | 1.20 |
| **2** | **2** | 110 | 2 | 9.50 | 190.07 | 5.81 | 74.38 | 21.00 | 1.84 | 5.29 | 3.45 | 0.40 |
| **3** | **1** | 304 | 4 | 30.50 | 51.77 | 4.37 | 66.49 | 35.37 | 0.97 | 9.01 | 8.05 | 2.20 |
| **4** | **1** | 223 | 6 | 22.50 | 43.63 | 2.70 | 31.42 | 186.42 | 0.10 | 6.42 | 6.32 | 2.00 |
| **4** | **2** | 14 | 5 | 9.50 | 52.95 | 0.21 | 9.47 | 850.68 | 0.01 | 0.44 | 0.43 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:08:11

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

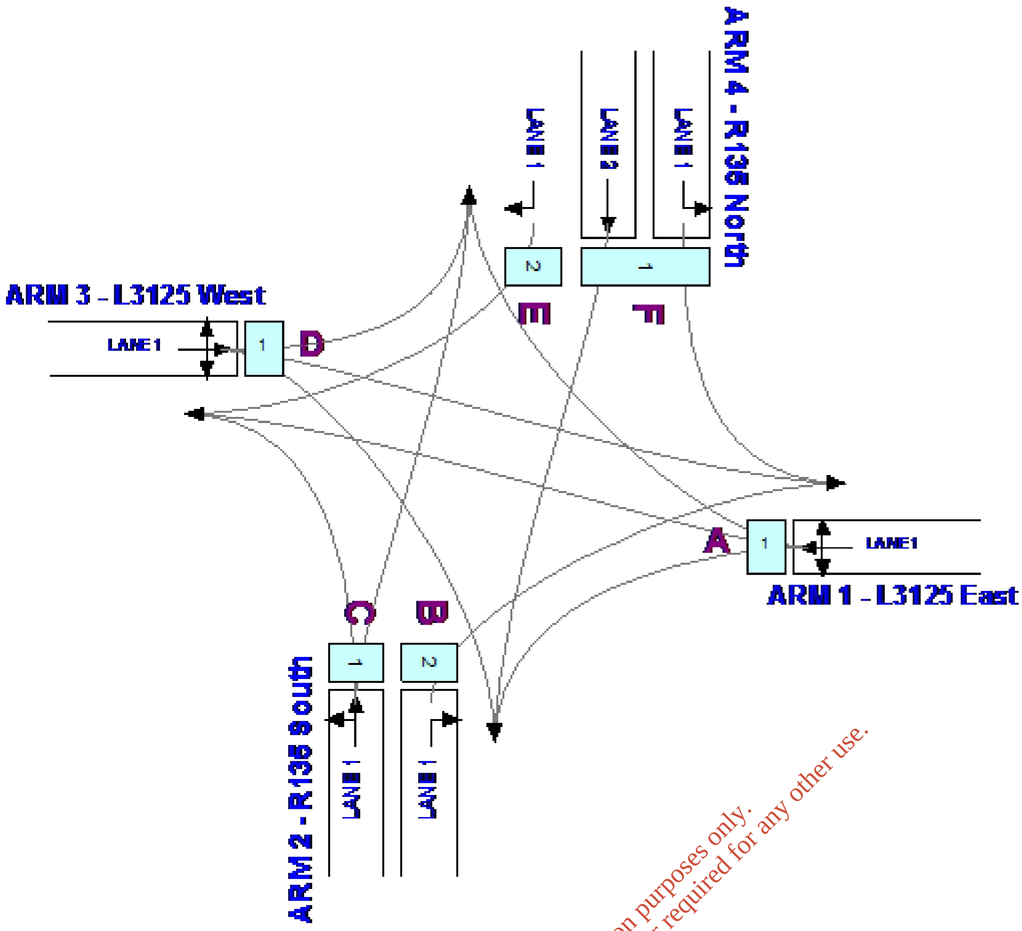
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram




# Signals



## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

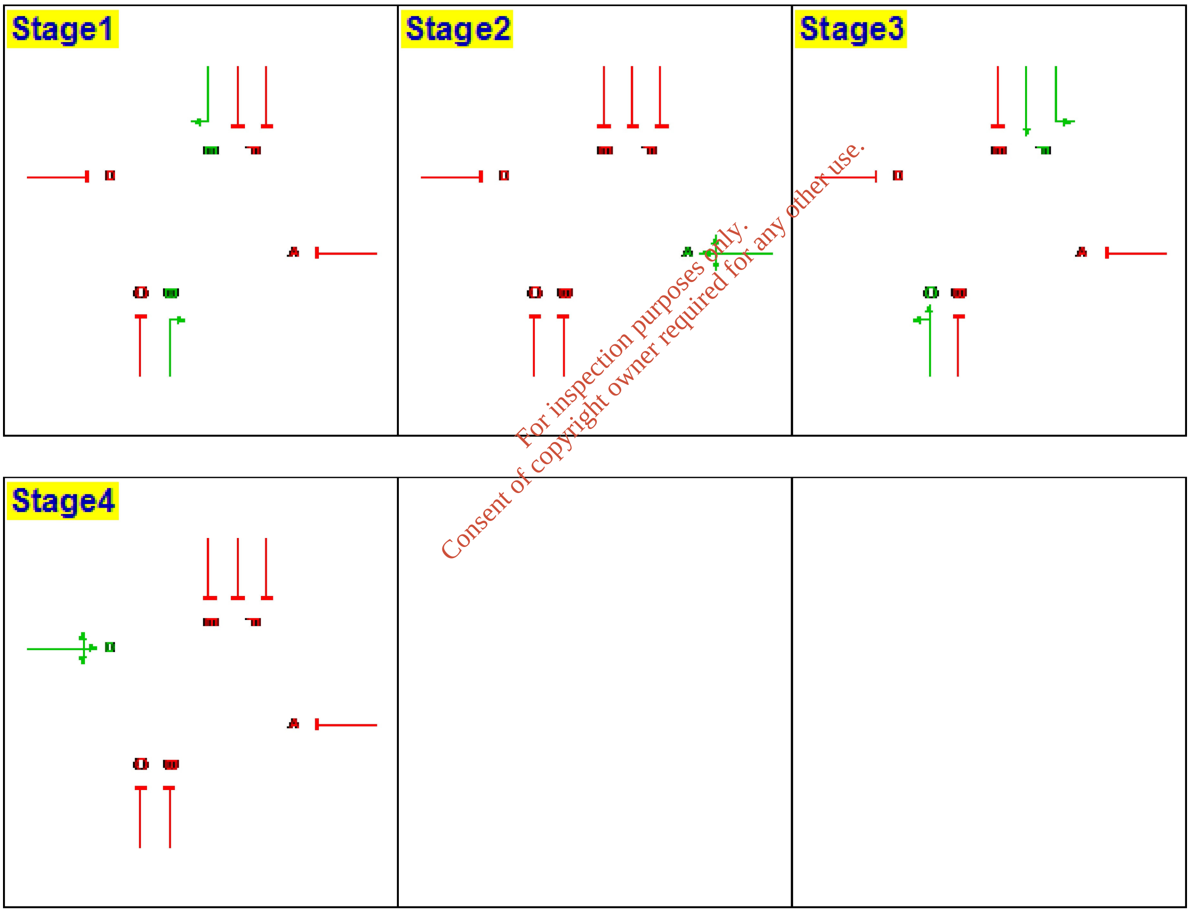
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2032 PM Peak With Dev | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2032 PM Peak With Dev

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 99 | 240 | 235 |
| | **Arm 2** | 148 | - | 147 | 139 |
| | **Arm 3** | 194 | 190 | - | 26 |
| | **Arm 4** | 192 | 106 | 20 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 431 | 514 | 630 | 630 | 514 | 431 |
| 2 - R135 South | 1 | C | 215 | 257 | 314 | 314 | 257 | 215 |
| 2 - R135 South | 2 | B | 111 | 132 | 162 | 162 | 132 | 111 |
| 3 - L3125 West | 1 | D | 304 | 364 | 445 | 445 | 364 | 304 |
| 4 - R135 North | 1 | F | 222 | 265 | 324 | 324 | 265 | 222 |
| 4 - R135 North | 2 | E | 14 | 17 | 21 | 21 | 17 | 14 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 60 | 33 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 7.29 | 28.19 | 28.19 | 54.2 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -10.56 | 34.36 | 34.36 | 50.50 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

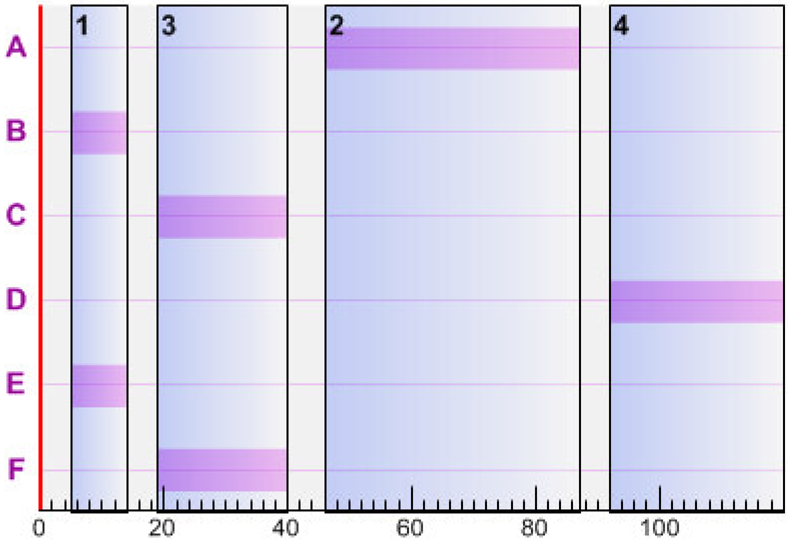
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 21.0 | 40.0 |
| 2 | 46.0 | 41.0 | 87.0 |
| 4 | 92.0 | 28.0 | 0.0 |



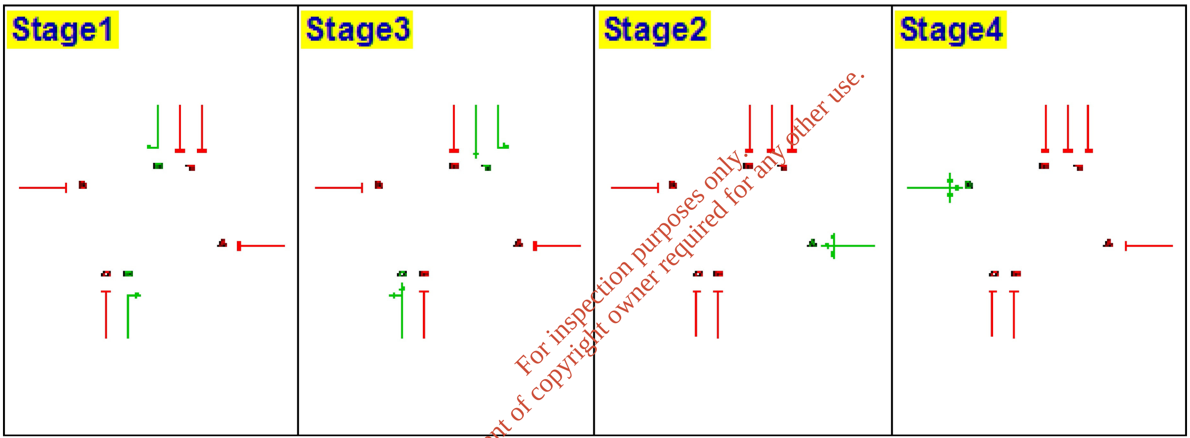
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 46 | 41.0 | 87 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 21.0 | 40 | | | | | | |
| **D** | 92 | 28.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 21.0 | 40 | | | | | | |

### Phase Timings Diagram




### Final Stage Sequence






### Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 525 | A | 42.50 | 52.64 | 7.68 | 82.77 | 8.74 | 2.87 | 15.50 | 12.63 | 20.50 |
| **2** | **1** | 262 | C | 22.50 | 76.10 | 5.54 | 81.05 | 11.04 | 2.33 | 9.82 | 7.49 | 6.70 |
| **2** | **2** | 135 | B | 10.50 | 113.55 | 4.26 | 82.59 | 8.97 | 2.46 | 6.68 | 4.22 | 2.40 |
| **3** | **1** | 371 | D | 29.50 | 69.11 | 7.12 | 83.89 | 7.29 | 3.00 | 13.08 | 10.07 | 10.40 |
| **4** | **1** | 270 | F | 22.50 | 44.70 | 3.35 | 38.04 | 136.56 | 0.16 | 7.89 | 7.73 | 13.60 |
| **4** | **2** | 17 | E | 10.50 | 52.10 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.60 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 431 | 1 | 42.50 | 40.38 | 4.83 | 67.95 | 32.46 | 1.00 | 11.16 | 10.15 | 4.20 |
| **2** | **1** | 215 | 3 | 22.50 | 58.27 | 3.48 | 66.51 | 35.31 | 0.86 | 6.94 | 6.08 | 1.20 |
| **2** | **2** | 111 | 2 | 10.50 | 77.75 | 2.40 | 67.91 | 32.53 | 0.86 | 4.31 | 3.45 | 0.40 |
| **3** | **1** | 304 | 4 | 29.50 | 51.76 | 4.37 | 68.74 | 30.93 | 1.01 | 9.15 | 8.14 | 2.10 |
| **4** | **1** | 222 | 6 | 22.50 | 43.59 | 2.69 | 31.28 | 187.71 | 0.10 | 6.39 | 6.29 | 2.00 |
| **4** | **2** | 14 | 5 | 10.50 | 51.69 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 514 | 1 | 42.50 | 49.36 | 7.05 | 81.03 | 11.07 | 2.31 | 14.65 | 12.33 | 3.50 |
| **2** | **1** | 257 | 3 | 22.50 | 70.57 | 5.04 | 79.51 | 13.20 | 1.85 | 9.19 | 7.34 | 1.10 |
| **2** | **2** | 132 | 2 | 10.50 | 98.45 | 3.61 | 80.76 | 11.44 | 1.75 | 5.87 | 4.12 | 0.40 |
| **3** | **1** | 364 | 4 | 29.50 | 63.72 | 6.44 | 82.31 | 9.35 | 2.35 | 12.22 | 9.87 | 1.80 |
| **4** | **1** | 265 | 6 | 22.50 | 44.58 | 3.28 | 37.34 | 141.03 | 0.15 | 7.73 | 7.58 | 2.20 |
| **4** | **2** | 17 | 5 | 10.50 | 52.09 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 630 | 1 | 42.50 | 80.85 | 14.15 | 99.32 | -9.38 | 10.65 | 26.17 | 15.52 | 1.70 |
| **2** | **1** | 314 | 3 | 22.50 | 103.81 | 9.05 | 97.14 | -7.35 | 6.16 | 15.23 | 9.07 | 0.80 |
| **2** | **2** | 162 | 2 | 10.50 | 142.76 | 6.42 | 99.11 | -9.19 | 4.94 | 10.03 | 5.09 | 0.40 |
| **3** | **1** | 445 | 4 | 29.50 | 100.22 | 12.39 | 100.62 | -10.56 | 9.53 | 21.73 | 12.20 | 1.00 |
| **4** | **1** | 324 | 6 | 22.50 | 46.11 | 4.15 | 45.65 | 97.14 | 0.27 | 9.65 | 9.38 | 2.50 |
| **4** | **2** | 21 | 5 | 10.50 | 52.67 | 0.31 | 12.85 | 600.50 | 0.01 | 0.65 | 0.64 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 630 | 1 | 42.50 | 106.56 | 18.65 | 99.32 | -9.38 | 14.14 | 29.66 | 15.52 | 1.50 |
| **2** | **1** | 314 | 3 | 22.50 | 131.34 | 11.46 | 97.14 | -7.35 | 7.83 | 16.91 | 9.07 | 0.80 |
| **2** | **2** | 162 | 2 | 10.50 | 188.32 | 8.47 | 99.11 | -9.19 | 6.52 | 11.61 | 5.09 | 0.40 |
| **3** | **1** | 445 | 4 | 29.50 | 135.29 | 16.72 | 100.62 | -10.56 | 13.06 | 25.26 | 12.20 | 0.90 |
| **4** | **1** | 324 | 6 | 22.50 | 46.13 | 4.15 | 45.65 | 97.14 | 0.27 | 9.65 | 9.38 | 2.50 |
| **4** | **2** | 21 | 5 | 10.50 | 52.67 | 0.31 | 12.85 | 600.50 | 0.01 | 0.65 | 0.64 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 514 | 1 | 42.50 | 68.84 | 9.83 | 81.03 | 11.07 | 2.84 | 15.18 | 12.33 | 3.40 |
| **2** | **1** | 257 | 3 | 22.50 | 99.02 | 7.07 | 79.51 | 13.20 | 2.50 | 9.83 | 7.34 | 1.10 |
| **2** | **2** | 132 | 2 | 10.50 | 169.75 | 6.22 | 80.76 | 11.44 | 2.95 | 7.08 | 4.12 | 0.40 |
| **3** | **1** | 364 | 4 | 29.50 | 102.44 | 10.36 | 82.31 | 9.35 | 3.23 | 13.10 | 9.87 | 1.70 |
| **4** | **1** | 265 | 6 | 22.50 | 44.60 | 3.28 | 37.34 | 141.03 | 0.16 | 7.73 | 7.58 | 2.20 |
| **4** | **2** | 17 | 5 | 10.50 | 52.11 | 0.25 | 10.40 | 765.32 | 0.01 | 0.53 | 0.52 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 431 | 1 | 42.50 | 41.72 | 4.99 | 67.95 | 32.46 | 1.08 | 11.23 | 10.15 | 4.10 |
| **2** | **1** | 215 | 3 | 22.50 | 62.52 | 3.73 | 66.51 | 35.31 | 0.97 | 7.05 | 6.08 | 1.20 |
| **2** | **2** | 111 | 2 | 10.50 | 97.96 | 3.02 | 67.91 | 32.53 | 1.09 | 4.54 | 3.45 | 0.40 |
| **3** | **1** | 304 | 4 | 29.50 | 55.10 | 4.65 | 68.74 | 30.93 | 1.12 | 9.25 | 8.14 | 2.00 |
| **4** | **1** | 222 | 6 | 22.50 | 43.61 | 2.69 | 31.28 | 187.71 | 0.10 | 6.39 | 6.29 | 2.00 |
| **4** | **2** | 14 | 5 | 10.50 | 51.71 | 0.20 | 8.57 | 950.75 | 0.01 | 0.43 | 0.43 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:09:38

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

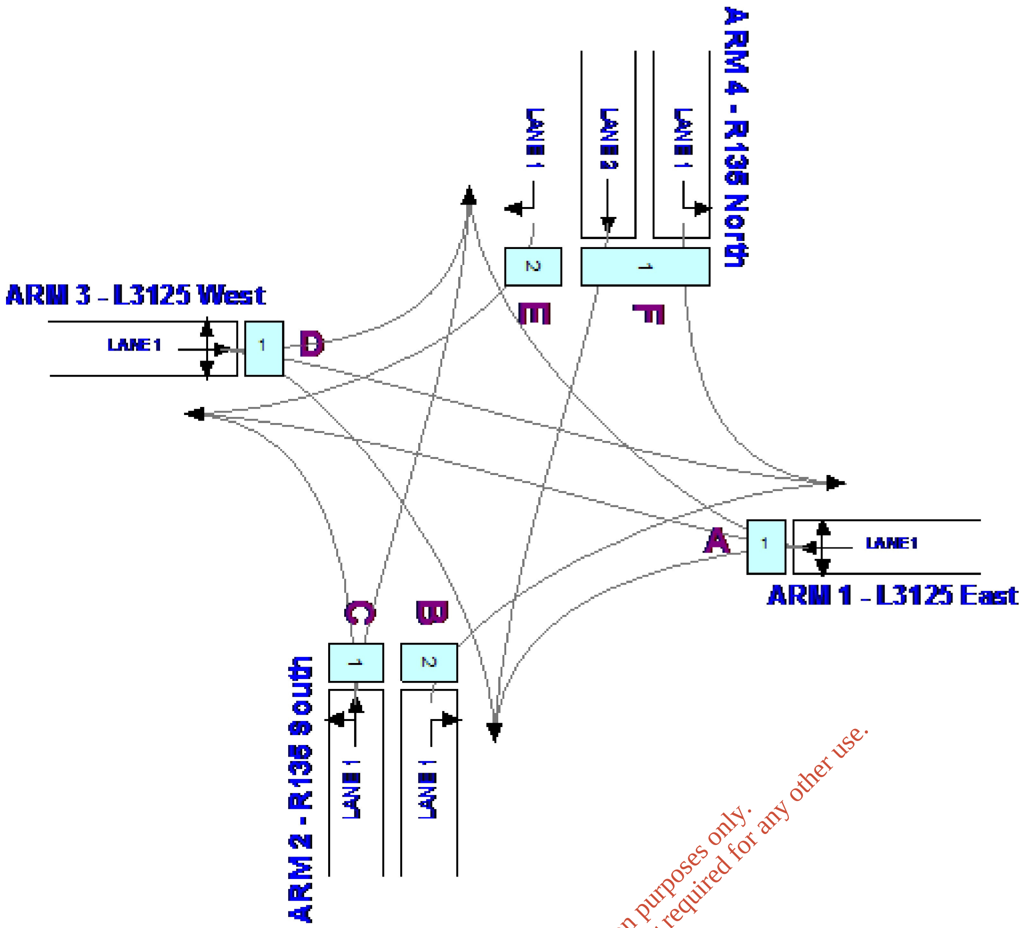
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

### Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

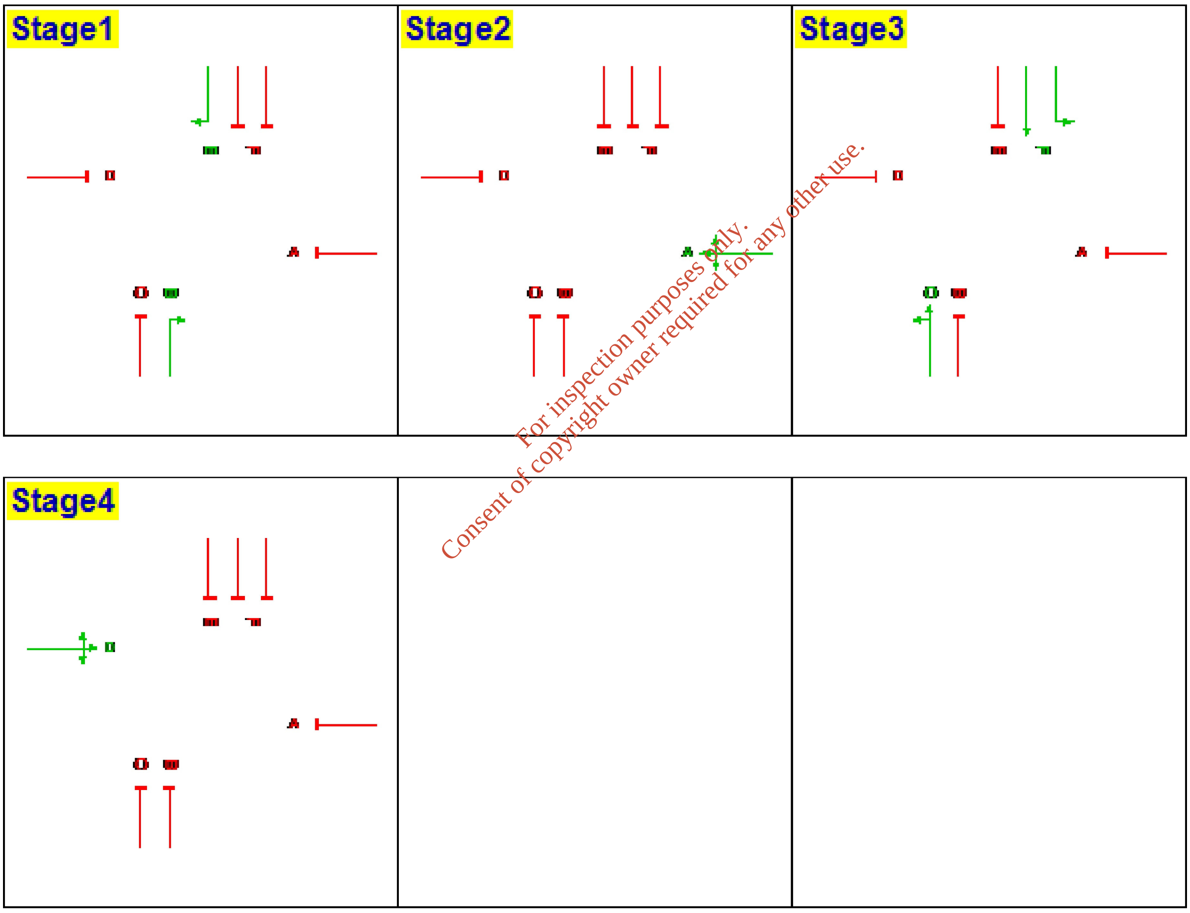
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |



## Demand Sets

| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2032 PM Peak Sen | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2032 PM Peak Sen

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 99 | 240 | 235 |
| | **Arm 2** | 148 | - | 147 | 155 |
| | **Arm 3** | 194 | 190 | - | 26 |
| | **Arm 4** | 192 | 122 | 20 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 431 | 514 | 630 | 630 | 514 | 431 |
| 2 - R135 South | 1 | C | 226 | 270 | 331 | 331 | 270 | 226 |
| 2 - R135 South | 2 | B | 111 | 133 | 163 | 163 | 133 | 111 |
| 3 - L3125 West | 1 | D | 304 | 364 | 445 | 445 | 364 | 304 |
| 4 - R135 North | 1 | F | 235 | 281 | 344 | 344 | 281 | 235 |
| 4 - R135 North | 2 | E | 15 | 18 | 22 | 22 | 18 | 15 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 17 | 42 | 41 |
| 2 - R135 South | 33 | 34 | 33 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 57 | 37 | 6 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:**Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 5.41 | 29.59 | 29.59 | 54.4 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -12.11 | 36.51 | 36.51 | 50.60 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

### Stage Timings

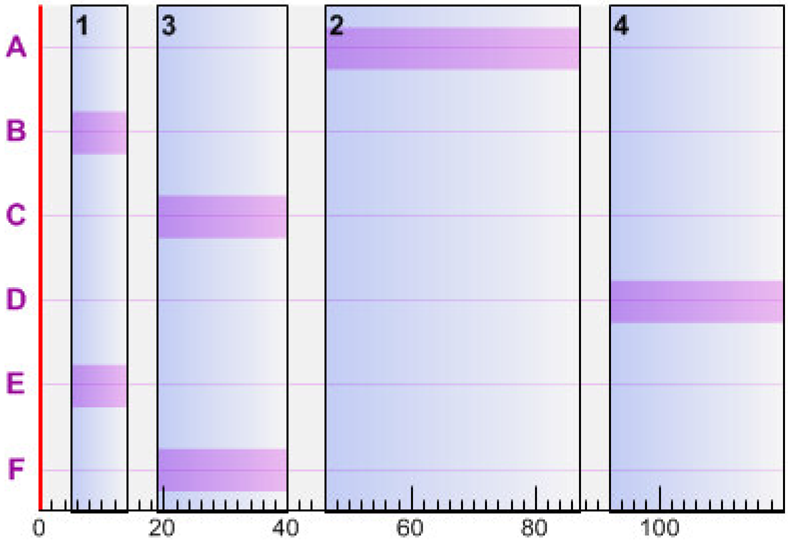
| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 9.0 | 14.0 |
| 3 | 19.0 | 21.0 | 40.0 |
| 2 | 46.0 | 41.0 | 87.0 |
| 4 | 92.0 | 28.0 | 0.0 |



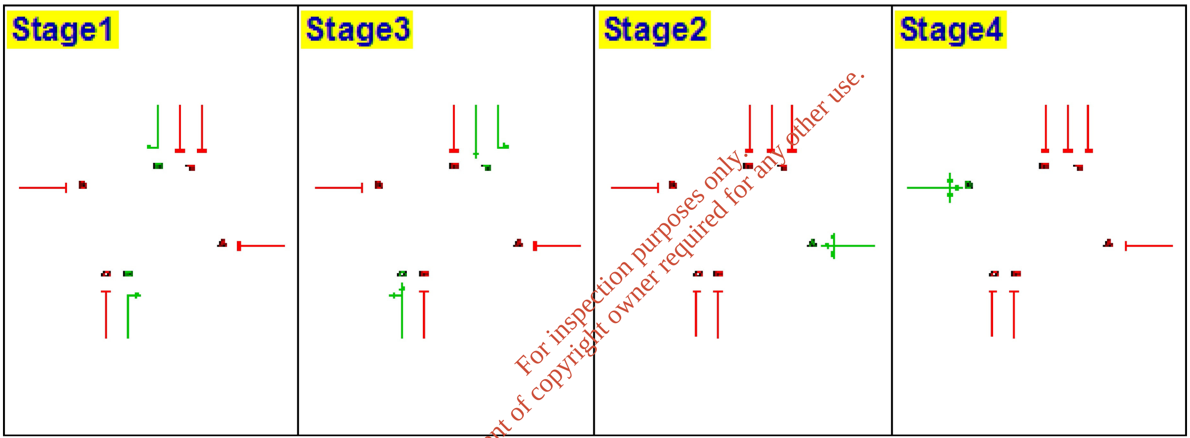
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 46 | 41.0 | 87 | | | | | | |
| **B** | 5 | 9.0 | 14 | | | | | | |
| **C** | 19 | 21.0 | 40 | | | | | | |
| **D** | 92 | 28.0 | 0 | | | | | | |
| **E** | 5 | 9.0 | 14 | | | | | | |
| **F** | 19 | 21.0 | 40 | | | | | | |

**Phase Timings Diagram**




**Final Stage Sequence**






**Traffic Stream Details (Signal Optimiser Run)**

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 525 | A | 42.50 | 52.64 | 7.68 | 82.77 | 8.74 | 2.87 | 15.50 | 12.63 | 20.50 |
| **2** | **1** | 276 | C | 22.50 | 85.67 | 6.57 | 85.38 | 5.41 | 3.29 | 11.20 | 7.91 | 6.30 |
| **2** | **2** | 136 | B | 10.50 | 115.65 | 4.37 | 83.21 | 8.17 | 2.57 | 6.82 | 4.25 | 2.40 |
| **3** | **1** | 371 | D | 29.50 | 69.11 | 7.12 | 83.89 | 7.29 | 3.00 | 13.08 | 10.07 | 10.40 |
| **4** | **1** | 287 | F | 22.50 | 45.13 | 3.60 | 40.44 | 122.55 | 0.19 | 8.44 | 8.25 | 14.10 |
| **4** | **2** | 18 | E | 10.50 | 52.24 | 0.26 | 11.01 | 717.25 | 0.01 | 0.56 | 0.55 | 0.70 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 431 | 1 | 42.50 | 40.38 | 4.83 | 67.95 | 32.46 | 1.00 | 11.16 | 10.15 | 4.20 |
| **2** | **1** | 226 | 3 | 22.50 | 60.42 | 3.79 | 69.91 | 28.73 | 1.04 | 7.45 | 6.41 | 1.20 |
| **2** | **2** | 111 | 2 | 10.50 | 77.75 | 2.40 | 67.91 | 32.53 | 0.86 | 4.31 | 3.45 | 0.40 |
| **3** | **1** | 304 | 4 | 29.50 | 51.76 | 4.37 | 68.74 | 30.93 | 1.01 | 9.15 | 8.14 | 2.10 |
| **4** | **1** | 235 | 6 | 22.50 | 43.87 | 2.86 | 33.11 | 171.80 | 0.11 | 6.79 | 6.68 | 2.10 |
| **4** | **2** | 15 | 5 | 10.50 | 51.82 | 0.22 | 9.18 | 880.70 | 0.01 | 0.46 | 0.46 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 514 | 1 | 42.50 | 49.36 | 7.05 | 81.03 | 11.07 | 2.31 | 14.65 | 12.33 | 3.50 |
| **2** | **1** | 270 | 3 | 22.50 | 75.94 | 5.70 | 83.53 | 7.75 | 2.39 | 10.12 | 7.73 | 1.10 |
| **2** | **2** | 133 | 2 | 10.50 | 99.36 | 3.67 | 81.37 | 10.61 | 1.81 | 5.96 | 4.16 | 0.40 |
| **3** | **1** | 364 | 4 | 29.50 | 63.72 | 6.44 | 82.31 | 9.35 | 2.35 | 12.22 | 9.87 | 1.80 |
| **4** | **1** | 281 | 6 | 22.50 | 44.97 | 3.51 | 39.59 | 127.30 | 0.18 | 8.24 | 8.06 | 2.30 |
| **4** | **2** | 18 | 5 | 10.50 | 52.25 | 0.26 | 11.01 | 717.25 | 0.01 | 0.56 | 0.55 | 0.10 |

## Traffic Stream Details (17:00-17:15)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 630 | 1 | 42.50 | 80.85 | 14.15 | 99.32 | -9.38 | 10.65 | 26.17 | 15.52 | 1.70 |
| **2** | **1** | 331 | 3 | 22.50 | 118.03 | 10.85 | 102.40 | -12.11 | 8.92 | 18.30 | 9.38 | 0.70 |
| **2** | **2** | 163 | 2 | 10.50 | 144.84 | 6.56 | 99.72 | -9.75 | 5.11 | 10.24 | 5.12 | 0.30 |
| **3** | **1** | 445 | 4 | 29.50 | 100.22 | 12.39 | 100.62 | -10.56 | 9.53 | 21.73 | 12.20 | 1.00 |
| **4** | **1** | 344 | 6 | 22.50 | 46.69 | 4.46 | 48.47 | 85.67 | 0.32 | 10.32 | 10.01 | 2.60 |
| **4** | **2** | 22 | 5 | 10.50 | 52.81 | 0.32 | 13.46 | 568.66 | 0.01 | 0.69 | 0.67 | 0.10 |



## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 630 | 1 | 42.50 | 106.56 | 18.65 | 99.32 | -9.38 | 14.14 | 29.66 | 15.52 | 1.50 |
| **2** | **1** | 331 | 3 | 22.50 | 164.57 | 15.13 | 102.40 | -12.11 | 12.59 | 21.96 | 9.38 | 0.70 |
| **2** | **2** | 163 | 2 | 10.50 | 192.57 | 8.72 | 99.72 | -9.75 | 6.81 | 11.93 | 5.12 | 0.30 |
| **3** | **1** | 445 | 4 | 29.50 | 135.29 | 16.72 | 100.62 | -10.56 | 13.06 | 25.26 | 12.20 | 0.90 |
| **4** | **1** | 344 | 6 | 22.50 | 46.71 | 4.46 | 48.47 | 85.67 | 0.32 | 10.33 | 10.01 | 2.60 |
| **4** | **2** | 22 | 5 | 10.50 | 52.81 | 0.32 | 13.46 | 568.66 | 0.01 | 0.69 | 0.67 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 514 | 1 | 42.50 | 68.84 | 9.83 | 81.03 | 11.07 | 2.84 | 15.18 | 12.33 | 3.40 |
| **2** | **1** | 270 | 3 | 22.50 | 142.70 | 10.70 | 83.53 | 7.75 | 3.76 | 11.49 | 7.73 | 1.00 |
| **2** | **2** | 133 | 2 | 10.50 | 176.19 | 6.51 | 81.37 | 10.61 | 3.13 | 7.29 | 4.16 | 0.40 |
| **3** | **1** | 364 | 4 | 29.50 | 102.44 | 10.36 | 82.31 | 9.35 | 3.23 | 13.10 | 9.87 | 1.70 |
| **4** | **1** | 281 | 6 | 22.50 | 45.00 | 3.51 | 39.59 | 127.30 | 0.18 | 8.25 | 8.06 | 2.30 |
| **4** | **2** | 18 | 5 | 10.50 | 52.25 | 0.26 | 11.01 | 717.25 | 0.01 | 0.56 | 0.55 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 431 | 1 | 42.50 | 41.72 | 4.99 | 67.95 | 32.46 | 1.08 | 11.23 | 10.15 | 4.10 |
| **2** | **1** | 226 | 3 | 22.50 | 68.32 | 4.29 | 69.91 | 28.73 | 1.21 | 7.62 | 6.41 | 1.20 |
| **2** | **2** | 111 | 2 | 10.50 | 99.57 | 3.07 | 67.91 | 32.53 | 1.09 | 4.54 | 3.45 | 0.40 |
| **3** | **1** | 304 | 4 | 29.50 | 55.10 | 4.65 | 68.74 | 30.93 | 1.12 | 9.25 | 8.14 | 2.00 |
| **4** | **1** | 235 | 6 | 22.50 | 43.90 | 2.87 | 33.11 | 171.80 | 0.11 | 6.79 | 6.68 | 2.10 |
| **4** | **2** | 15 | 5 | 10.50 | 51.84 | 0.22 | 9.18 | 880.70 | 0.01 | 0.46 | 0.46 | 0.10 |

# OSCADY PRO

GUI Version: 1.3.1 [05/05/11]
Analysis Program Version: v1.3 23/03/2009



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

**The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution**

**File:** S:\Jobs\2016\16047 New Access at Huntstown Quarry, Co. Dublin\16047-04 Huntstown C&D Waste Recovery Facility TIA\Reports\Appendices\OSCADY PRO\Crossroads PM.osc
**Report generation date:** 09/12/2016 11:13:52

# Summary

## File Description

| | |
|---|---|
| **Title** | (untitled) |
| **Date** | 21/07/2016 |
| **Location** | |
| **Driving Side** | Left |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Enumerator** | gfrisby [ROADPLAN-PC02] |
| **Status** | (new file) |
| **Description** | |



## Run Options

| | |
|---|---|
| **Run Evaluation Set** | No |
| **Evaluation Only** | No |
| **Optimise Critical Cycle TimeOnly** | No |
| **Use Horizontal Queues** | Yes |
| **Favour Continuous Green** | No |
| **Phase Timings Fuzziness (s)** | 0.5 |
| **Integer Phase Timings** | Yes |
| **Phase Snapping Distance (s)** | 0 |
| **Automatic Lane Turning Props** | Yes |
| **Automatic Vehicle Props** | No |

# Geometry

## Arms

| Arm | Name | Exit Width (m) | Approach Speed (kph) | Exit Speed (kph) | Speed Limit (kph) | Stagger Distance (m) |
|---|---|---|---|---|---|---|
| **1** | L3125 East | 50.0 | 10 | 10 | 80 | 0 |
| **2** | R135 South | 50.0 | 10 | 10 | 80 | 0 |
| **3** | L3125 West | 50.0 | 10 | 10 | 80 | 0 |
| **4** | R135 North | 50.0 | 10 | 10 | 80 | 0 |

## Traffic Streams

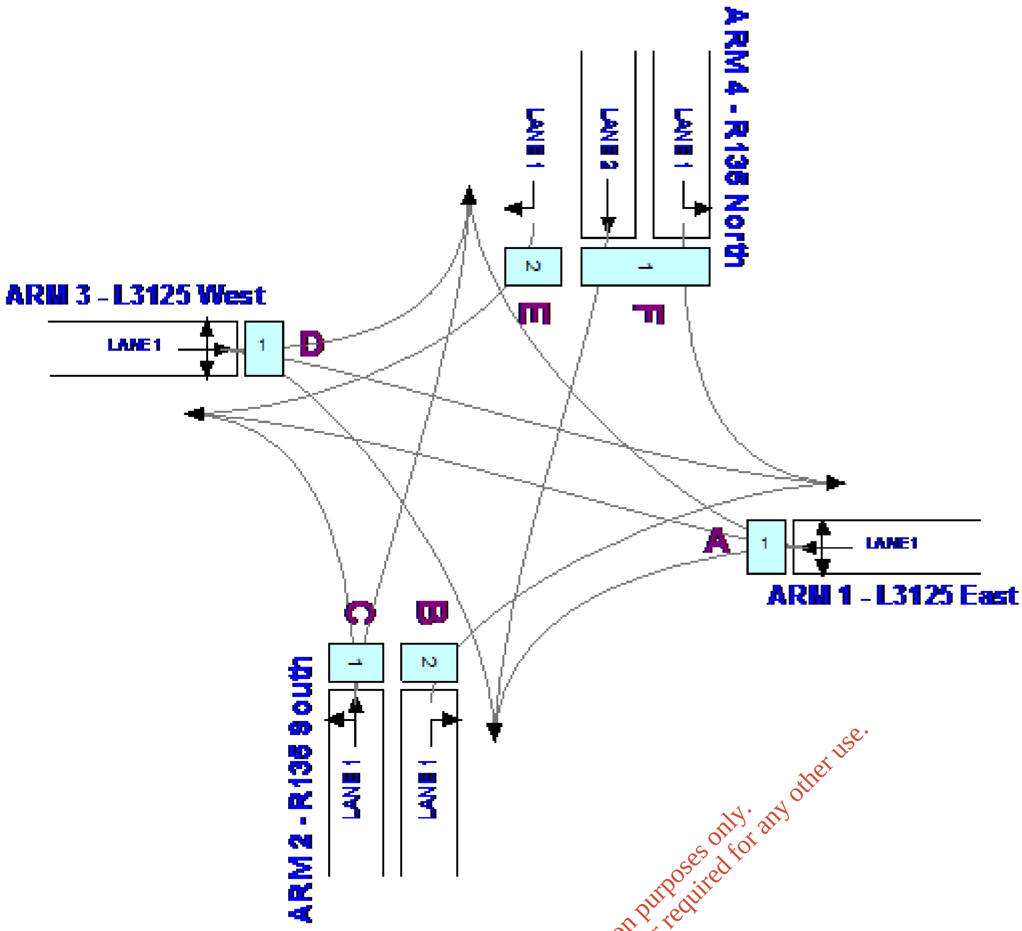
| Arm | Traffic Stream | Type | Name | Sat Flow (PCU/hr) | Estimate Sat Flow | Sat Flow 2 (PCU/hr) | Green Phase | Arrow Phase |
|---|---|---|---|---|---|---|---|---|
| **1** | **1** | Traffic | | 1791 | Yes | 0 | A | - |
| **2** | **1** | Traffic | | 1724 | Yes | 0 | C | - |
| **2** | **2** | Traffic | | 1868 | Yes | 0 | B | - |
| **3** | **1** | Traffic | | 1799 | Yes | 0 | D | - |
| **4** | **1** | Traffic | | 3785 | Yes | 0 | F | - |
| **4** | **2** | Traffic | | 1868 | Yes | 0 | E | - |

| Arm | Traffic Stream | Relative Start Displacement (s) | Relative End Displacement (s) | Max Deg Sat (%) | Delay Weight (%) | Max Queue (PCU) | Initial Queue (PCU) | Average PCU Per Veh | Heavy Vehicles Percentage |
|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **2** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **3** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **1** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |
| **4** | **2** | 0.0 | 0.0 | 90 | 100 | 0 | 0.0 | 1.10 | 0 |

## Lanes

| Arm | Traffic Stream | Lane | Name | Nearside Dest Arm | Straight Dest Arm | Offside Dest Arm | Proportion That Turn | Turning Radius (m) | IsNearside Lane | Width (m) | Gradient (%) | Short Lane Storage (PCU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | **1** | | 2 | 3 | 4 | 0.37 | 8 | Yes | 3.00 | 0.0 | 0 |
| **2** | **1** | **1** | | 3 | 4 | | 0.74 | 10 | Yes | 3.00 | 0.0 | 0 |
| **2** | **2** | **1** | | | | 1 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |
| **3** | **1** | **1** | | 4 | 1 | 2 | 0.43 | 10 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **1** | | 1 | | | 1.00 | 14 | Yes | 3.00 | 0.0 | 0 |
| **4** | **1** | **2** | | | 2 | | 0.00 | 10 | No | 3.00 | 0.0 | 0 |
| **4** | **2** | **1** | | | | 3 | 1.00 | 15 | No | 3.00 | 0.0 | 0 |

## Junction Diagram






# Signals

## Signals

| | |
|---|---|
| **Max Cycle Time (s)** | 120 |
| **Fixed Cycle Time (s)** | 0 |
| **Evaluation Cycle Time (s)** | 0 |
| **Start Displacement (s)** | 1.4 |
| **End Displacement (s)** | 2.9 |

## Phases

| Phase | Name | Type | Associated Phase | Phase Min Green (s) | Phase Max Green (s) | Double Green |
|---|---|---|---|---|---|---|
| **A** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **B** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **C** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **D** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **E** | (Name) | Traffic | - | 7.0 | 0.0 | No |
| **F** | (Name) | Traffic | - | 7.0 | 0.0 | No |

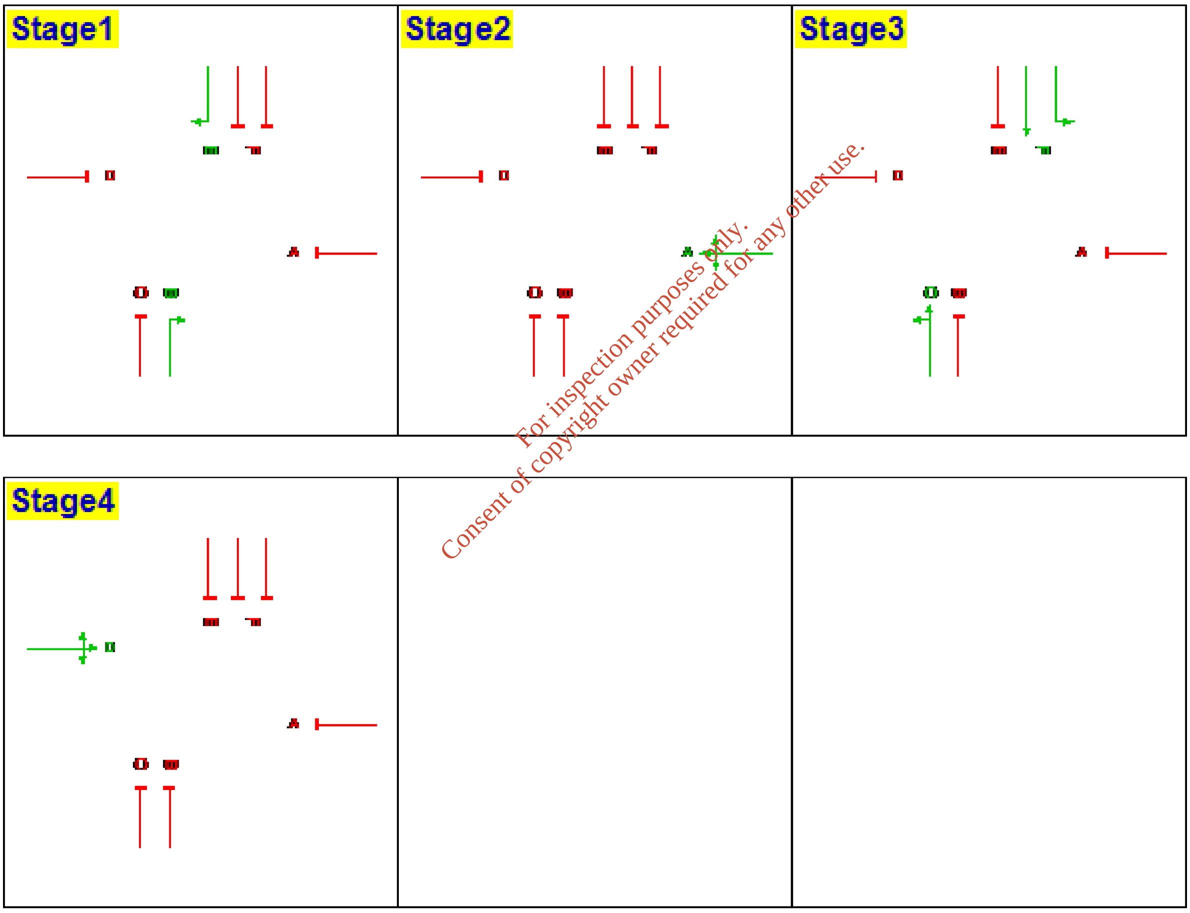
## Intergreen Matrix

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | **A** | **B** | **C** | **D** | **E** | **F** |
| **From** | **A** | - | 5 | 5 | 5 | 5 | 5 |
| | **B** | 6 | - | 5 | 6 | | 5 |
| | **C** | 6 | 5 | - | 6 | 5 | |
| | **D** | 5 | 5 | 5 | - | 5 | 5 |
| | **E** | 6 | | 5 | 6 | - | 5 |
| | **F** | 6 | 5 | | 6 | 5 | - |

## Stages

| Stage | Stage Min Green (s) | Phases In This Stage | Use To Generate Sequences |
|---|---|---|---|
| **1** | -1 | B,E | Yes |
| **2** | -1 | A | Yes |
| **3** | -1 | C,F | Yes |
| **4** | -1 | D | Yes |

## Stage Diagrams



## Sequences

| Sequence | Name | Stages In This Sequence |
|---|---|---|
| **1** | | 1,2,3,4 |
| **2** | | 1,4,3,2 |
| **3** | | 1,3,2,4 |
| **4** | | 1,4,2,3 |
| **5** | | 1,2,4,3 |
| **6** | | 1,3,4,2 |

## Constraints

*(No constraints)*

# Traffic

***Note:****Traffic flows are only shown for selected demand sets. Resultant flows are the sums of the selected demand sets adjusted by the global traffic scaling factor, and are shown as the arrival rates in the final results tables.*

## Configuration

| | |
|---|---|
| **Traffic Scaling Factor** | 1.00 |
| **Time Period (min)** | 90 |
| **Time Segment Length (min)** | 15 |
| **Signal Optimiser Flows** | Average |
| **PCUs per Heavy Vehicle** | 2.00 |

## Demand Sets



| Name | Selected | Time Start | Time End | Profile Type | Use Relationship | Relationship |
|---|---|---|---|---|---|---|
| 2016 AM Peak Existing | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2017 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak No Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2023 AM Peak With Dev | No | 07:15 | 08:45 | ODTAB | No | D1 |
| 2016 PM Peak Existing | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2017 PM Peak With Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2022 PM Peak No Dev | No | 16:30 | 18:00 | ODTAB | No | D1 |
| 2032 PM Peak + Link | Yes | 16:30 | 18:00 | ODTAB | No | D1 |

## Demand Set10 - 2032 PM Peak + Link

### ODTAB Data (PCU/hr during central 60 min peak period)

| | | To | | | |
|---|---|---|---|---|---|
| | | **Arm 1** | **Arm 2** | **Arm 3** | **Arm 4** |
| **From** | **Arm 1** | - | 99 | 240 | 114 |
| | **Arm 2** | 148 | - | 147 | 139 |
| | **Arm 3** | 194 | 190 | - | 26 |
| | **Arm 4** | 96 | 106 | 20 | - |

**Average pedestrian flow on each pedestrian stream (if applicable):** 0 ped/hr

## Traffic flows (PCU/hr)

| Arm | Traffic Stream | Phase | 16:30-16:45 | 16:45-17:00 | 17:00-17:15 | 17:15-17:30 | 17:30-17:45 | 17:45-18:00 |
|---|---|---|---|---|---|---|---|---|
| 1 - L3125 East | 1 | A | 340 | 406 | 497 | 497 | 406 | 340 |
| 2 - R135 South | 1 | C | 215 | 257 | 314 | 314 | 257 | 215 |
| 2 - R135 South | 2 | B | 111 | 132 | 162 | 162 | 132 | 111 |
| 3 - L3125 West | 1 | D | 304 | 364 | 445 | 445 | 364 | 304 |
| 4 - R135 North | 1 | F | 152 | 181 | 222 | 222 | 181 | 152 |
| 4 - R135 North | 2 | E | 15 | 18 | 22 | 22 | 18 | 15 |

## Turning Proportions

| Arm | Left Movement Percentage | Straight Movement Percentage | Right Movement Percentage |
|---|---|---|---|
| 1 - L3125 East | 22 | 53 | 25 |
| 2 - R135 South | 34 | 32 | 34 |
| 3 - L3125 West | 6 | 47 | 46 |
| 4 - R135 North | 43 | 48 | 9 |

## Sequence3; Objective: MAXIMUM CAPACITY

***Note:****Individual time segment results are included for this sequence/objective. Results for the 'Signal Optimiser Run' tables are based on the signal optimiser traffic flows, rather than individual time segment flows.*

### Summary (Signal Optimiser Run)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| 120.0 | 18.20 | 22.00 | 22.00 | 54.2 |

- *Cycle Time is the minimum cycle time that meets all safety criteria whilst optimising this objective.*
- *PRC is the lowest value encountered over all streams.*
- *Rate of delay is the sum of each stream's rate of delay.*

### Summary (Time Segments)

| Cycle Time (s) | Practical Reserve Capacity (%) | Rate of Delay (PCU) | Weighted Rate of Delay (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|
| - | -1.46 | 24.39 | 24.39 | 51.50 |

- *PRC is the lowest value encountered over all streams and time segments.*
- *Rate of delay is the sum of each stream's rate of delay, averaged over time segments.*

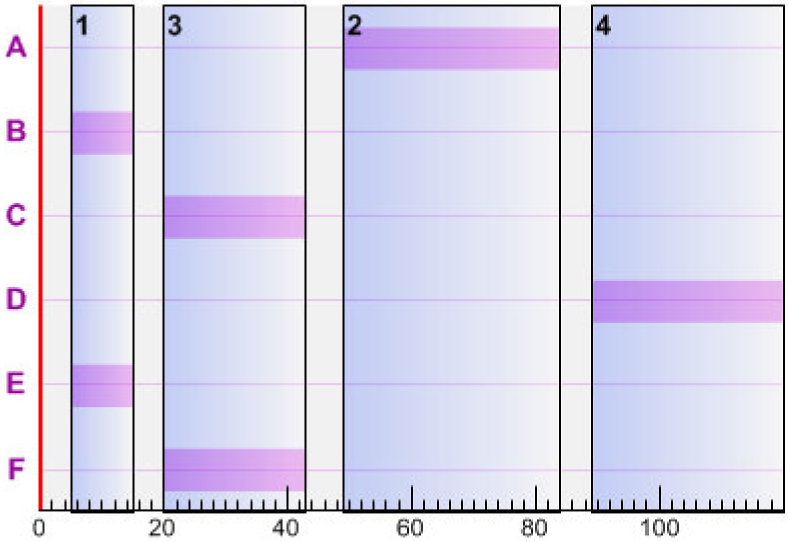
### Stage Timings

| Stage | Start Time (s) | Duration (s) | End Time (s) |
|---|---|---|---|
| 1 | 5.0 | 10.0 | 15.0 |
| 3 | 20.0 | 23.0 | 43.0 |
| 2 | 49.0 | 35.0 | 84.0 |
| 4 | 89.0 | 31.0 | 0.0 |

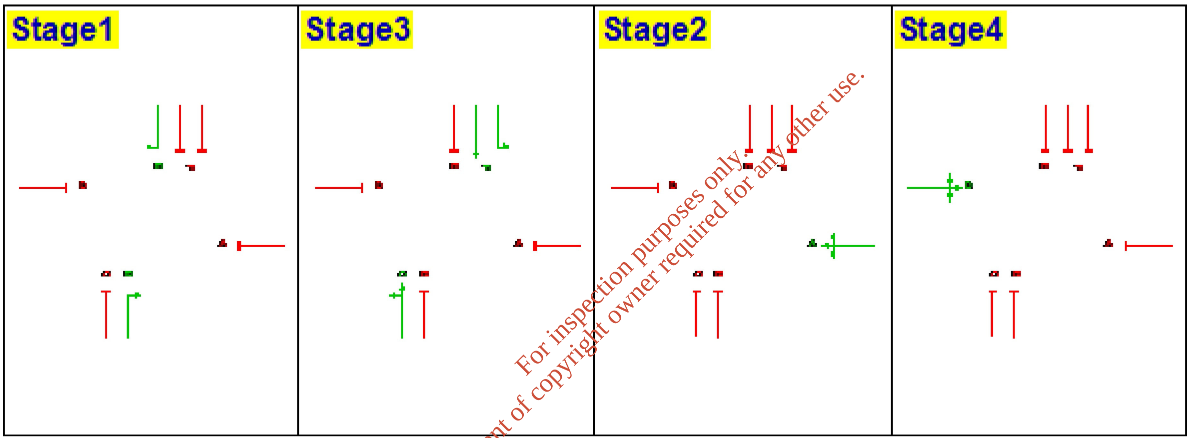
### Phase Timings

| Phase | Start Time (s) | Duration (s) | End Time (s) | Filter Arrow Time (s) | Indicative Arrow Start (s) | Indicative Arrow Duration (s) | Start Time (s) (2nd green) | Duration (s) (2nd green) | End Time (s) (2nd green) |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 49 | 35.0 | 84 | | | | | | |
| **B** | 5 | 10.0 | 15 | | | | | | |
| **C** | 20 | 23.0 | 43 | | | | | | |
| **D** | 89 | 31.0 | 0 | | | | | | |
| **E** | 5 | 10.0 | 15 | | | | | | |
| **F** | 20 | 23.0 | 43 | | | | | | |

## Phase Timings Diagram




## Final Stage Sequence






## Traffic Stream Details (Signal Optimiser Run)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 414 | A | 36.50 | 51.24 | 5.89 | 76.00 | 18.43 | 1.71 | 12.18 | 10.47 | 17.20 |
| **2** | **1** | 262 | C | 24.50 | 63.80 | 4.64 | 74.44 | 20.91 | 1.48 | 8.82 | 7.33 | 8.20 |
| **2** | **2** | 135 | B | 11.50 | 90.81 | 3.41 | 75.41 | 19.34 | 1.51 | 5.69 | 4.18 | 2.70 |
| **3** | **1** | 371 | D | 32.50 | 55.31 | 5.70 | 76.14 | 18.20 | 1.71 | 11.45 | 9.74 | 13.90 |
| **4** | **1** | 185 | F | 24.50 | 40.92 | 2.10 | 23.94 | 275.94 | 0.05 | 5.15 | 5.10 | 11.50 |
| **4** | **2** | 18 | E | 11.50 | 51.01 | 0.26 | 10.05 | 795.08 | 0.01 | 0.55 | 0.54 | 0.70 |

## Traffic Stream Details (16:30-16:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 340 | 1 | 36.50 | 42.71 | 4.03 | 62.41 | 44.20 | 0.71 | 9.17 | 8.46 | 3.10 |
| **2** | **1** | 215 | 3 | 24.50 | 53.22 | 3.18 | 61.08 | 47.34 | 0.64 | 6.59 | 5.96 | 1.40 |
| **2** | **2** | 111 | 2 | 11.50 | 70.79 | 2.18 | 62.01 | 45.15 | 0.63 | 4.05 | 3.42 | 0.50 |
| **3** | **1** | 304 | 4 | 32.50 | 45.99 | 3.88 | 62.39 | 44.25 | 0.70 | 8.57 | 7.87 | 2.50 |
| **4** | **1** | 152 | 6 | 24.50 | 40.34 | 1.70 | 19.67 | 357.56 | 0.03 | 4.19 | 4.16 | 1.60 |
| **4** | **2** | 15 | 5 | 11.50 | 50.66 | 0.21 | 8.38 | 974.10 | 0.01 | 0.46 | 0.45 | 0.10 |

## Traffic Stream Details (16:45-17:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 406 | 1 | 36.50 | 49.45 | 5.58 | 74.53 | 20.76 | 1.47 | 11.72 | 10.25 | 2.90 |
| **2** | **1** | 257 | 3 | 24.50 | 61.31 | 4.38 | 73.01 | 23.26 | 1.26 | 8.45 | 7.19 | 1.40 |
| **2** | **2** | 132 | 2 | 11.50 | 84.24 | 3.09 | 73.74 | 22.06 | 1.20 | 5.29 | 4.09 | 0.50 |
| **3** | **1** | 364 | 4 | 32.50 | 53.29 | 5.39 | 74.71 | 20.47 | 1.46 | 11.01 | 9.54 | 2.30 |
| **4** | **1** | 181 | 6 | 24.50 | 40.85 | 2.05 | 23.42 | 284.25 | 0.05 | 5.03 | 4.98 | 1.90 |
| **4** | **2** | 18 | 5 | 11.50 | 51.00 | 0.26 | 10.05 | 795.08 | 0.01 | 0.55 | 0.54 | 0.10 |

## Traffic Stream Details (17:00-17:15)



| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 36.50 | 68.76 | 9.49 | 91.23 | -1.35 | 4.82 | 17.62 | 12.80 | 2.00 |
| **2** | **1** | 314 | 3 | 24.50 | 81.85 | 7.14 | 89.21 | 0.89 | 3.59 | 12.48 | 8.89 | 1.10 |
| **2** | **2** | 162 | 2 | 11.50 | 113.84 | 5.12 | 90.49 | -0.55 | 3.12 | 8.17 | 5.05 | 0.40 |
| **3** | **1** | 445 | 4 | 32.50 | 73.55 | 9.09 | 91.33 | -1.46 | 4.68 | 16.55 | 11.87 | 1.70 |
| **4** | **1** | 222 | 6 | 24.50 | 41.60 | 2.57 | 28.73 | 213.29 | 0.08 | 6.24 | 6.16 | 2.20 |
| **4** | **2** | 22 | 5 | 11.50 | 51.49 | 0.31 | 12.29 | 632.34 | 0.01 | 0.68 | 0.67 | 0.10 |

## Traffic Stream Details (17:15-17:30)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 497 | 1 | 36.50 | 77.00 | 10.63 | 91.23 | -1.35 | 5.38 | 18.18 | 12.80 | 2.00 |
| **2** | **1** | 314 | 3 | 24.50 | 91.54 | 7.98 | 89.21 | 0.89 | 4.01 | 12.90 | 8.89 | 1.10 |
| **2** | **2** | 162 | 2 | 11.50 | 134.80 | 6.07 | 90.49 | -0.55 | 3.68 | 8.72 | 5.05 | 0.40 |
| **3** | **1** | 445 | 4 | 32.50 | 82.96 | 10.26 | 91.33 | -1.46 | 5.27 | 17.14 | 11.87 | 1.60 |
| **4** | **1** | 222 | 6 | 24.50 | 41.61 | 2.57 | 28.73 | 213.29 | 0.08 | 6.24 | 6.16 | 2.20 |
| **4** | **2** | 22 | 5 | 11.50 | 51.49 | 0.31 | 12.29 | 632.34 | 0.01 | 0.68 | 0.67 | 0.10 |

## Traffic Stream Details (17:30-17:45)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 406 | 1 | 36.50 | 54.07 | 6.10 | 74.53 | 20.76 | 1.67 | 11.92 | 10.25 | 2.90 |
| **2** | **1** | 257 | 3 | 24.50 | 68.36 | 4.88 | 73.01 | 23.26 | 1.49 | 8.68 | 7.19 | 1.40 |
| **2** | **2** | 132 | 2 | 11.50 | 107.35 | 3.94 | 73.74 | 22.06 | 1.62 | 5.71 | 4.09 | 0.50 |
| **3** | **1** | 364 | 4 | 32.50 | 58.99 | 5.96 | 74.71 | 20.47 | 1.69 | 11.23 | 9.54 | 2.30 |
| **4** | **1** | 181 | 6 | 24.50 | 40.85 | 2.05 | 23.42 | 284.25 | 0.05 | 5.03 | 4.98 | 1.90 |
| **4** | **2** | 18 | 5 | 11.50 | 51.02 | 0.26 | 10.05 | 795.08 | 0.01 | 0.55 | 0.54 | 0.10 |

## Traffic Stream Details (17:45-18:00)

| Arm | Traffic Stream | Arrival Rate (PCU/hr) | Controlling Phase | Effective Green (s) | Average Delay (s) | Rate of Delay (PCU) | Degree of Saturation (%) | Practical Reserve Capacity (%) | Queue at End of Green (PCU) | Queue at End of Red (PCU) | Uniform Queue (PCU) | Geometric Delay (PCU-min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **1** | 340 | 1 | 36.50 | 43.53 | 4.11 | 62.41 | 44.20 | 0.75 | 9.22 | 8.46 | 3.10 |
| **2** | **1** | 215 | 3 | 24.50 | 54.90 | 3.28 | 61.08 | 47.34 | 0.69 | 6.65 | 5.96 | 1.40 |
| **2** | **2** | 111 | 2 | 11.50 | 77.84 | 2.40 | 62.01 | 45.15 | 0.74 | 4.16 | 3.42 | 0.50 |
| **3** | **1** | 304 | 4 | 32.50 | 47.04 | 3.97 | 62.39 | 44.25 | 0.75 | 8.62 | 7.87 | 2.50 |
| **4** | **1** | 152 | 6 | 24.50 | 40.34 | 1.70 | 19.67 | 357.56 | 0.03 | 4.19 | 4.16 | 1.60 |
| **4** | **2** | 15 | 5 | 11.50 | 50.67 | 0.21 | 8.38 | 974.10 | 0.01 | 0.46 | 0.45 | 0.10 |