

Proposed Development at Lucan Shopping Centre – AIR Traffic and Transport Response Note

Contract Number	C664_1 2021
Topic	Traffic and Transport Response Note to Additional Information Request (AIR) for proposed development at Lucan Shopping Centre (SDCC Reg. Ref. SD21A/0161)
Version Number	v1.3
Status	Final
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Reviewer	Cillian O'Reilly, Ciaran McKeon
Date	04 February 2022

1. Introduction

1.1. Overview

Transport Insights has been commissioned by ERF Lucan Investment DAC to prepare a response to Items 2 and 6 of an Additional Information Request (AIR) from South Dublin County Council (SDCC) in relation to a proposed development at Lucan Shopping Centre, Newcastle Road, Co. Dublin (SDCC Reg. Ref. SD21A/0161).

1.2. Recent Application History

Proposed Development Application

A planning application for a development including two-storey commercial building providing two new units and ancillary accommodation was submitted to SDCC in June 2021. Unit 1 (1,057sq.m) is proposed to be used as a shop and Unit 2 (517sq.m) is proposed to be used for professional services or health centre or office or gymnasium. The application also proposes a new pedestrian link to the adjoining Somerton site, reconfigured customer car park and new vehicle charging infrastructure.

SDCC Request for Additional Information

Following consideration of the planning application, an AIR was issued by SDCC on 16 August 2021. Traffic and transport related items within the AIR (Items 2 and 6), which are the subject of this Note, are reproduced below:

2. The Planning Authority generally welcomes the provision of a pedestrian/cyclist connection between the Somerton area and the Lucan Shopping Centre. However, the proposed execution of which is not considered to be of an acceptable high standard. The Planning Authority notes the requirements of the Adamstown Planning Scheme and the need to create a high-quality connection between the Lucan Shopping Centre and the residential lands to the west. The Planning Authority considers the proposed connection to be substandard for the following reasons:
 1. The pedestrian/cycle access should be uninterrupted and there should be a clear free and easy movement for 24 hours a day, 7 days a week. This has not been demonstrated through design.
 2. The pedestrian/cycle connection is not significantly overlooked or provided with perceived passive surveillance.
 3. The safety and comfort of users is not apparent in the proposed design and layout. It is proposed to intersect the pedestrian access with a service road to the west of the site and by a system of access-control by using manual swing gates. The gates by default will be temporarily closed when any delivery vehicles have to pass and then reopen. The movement of vehicles along the western boundary will thereby hinder the free movement of pedestrians and cyclists. This is not acceptable to the Planning Authority.
 4. It has not been demonstrated that the proposed route/connection would not give rise to anti-social behaviour.

The applicant is therefore requested to provide, as additional information, an alternative layout and design proposal, showing how pedestrians will be facilitated in accessing the site safely through a modified and widened pedestrian link, which provides perceived passive surveillance/overlooking of the access. It should be clearly demonstrated that the pedestrian and cyclist takes priority at this location on the site. In particular, the applicant should demonstrate that the proposed development would not limit the access of the public at any time of the day or night, the planning authority would suggest a complete separate service route from the pedestrian route, the planning authority also request fully detailed drawings clearly demonstrating safe and high quality linkages to the adjacent housing estates Hillcrest and the Somerton development and how the proposal will respond to these residential estates. A significant redesign should be submitted.

6. Roads.
 1. Subject to the above Additional Information item 2 (pedestrian link), the applicant is requested to submit a revised layout showing a redesign for pedestrian and cyclist entry point from Somerton development to the proposed development facilitating direct and unrestricted pedestrian and cyclist access with a minimum 2.5m width of pedestrian and cycle lane connecting with the Somerton development.
 2. The applicant shall submit a revised TTA with correct factors applied to background traffic flows. Applicant shall also implement some mitigation measures in the revised TTA showing measures taken to reduce existing and future traffic congestion at four-arm Newcastle Road/Shopping centre access/Esker Drive roundabout, as SDCC roads section have concerns with the existing traffic congestion issues at four-arm Newcastle Road/Shopping centre access/Esker Drive roundabout and to its close proximity to N4.
 3. The applicant shall submit information with regards to their proposed bin/waste collection arrangement and bin storage and collection locations, including auto track analysis showing how bin truck can access and egress the site safely.
 4. The applicant shall submit a revised layout showing, bicycle parking spaces for long term and short term in accordance with SDCC CDP 2016-2022 bicycle parking spaces standards.

1.3. Note Structure

The remainder of this Note is structured as follows:

- **Section 2** – provides response to Item 2 and 6.1;
- **Section 3** – provides response to Item 6.2;
- **Section 4** – provides response to Item 6.3; and
- **Section 5** – provides response to Item 6.4.

Appendices

- **Appendix A** – AM and PM Peak Hour Traffic Figures;
- **Appendix B** – Traffic Survey Screenshots;
- **Appendix C** – Do Nothing and Do Minimum Model Outputs;
- **Appendix D** – Do Something Model Outputs; and
- **Appendix E** – Swept Path Analysis Drawing.

2. Item 2 and 6.1

2.1. AIR Requirement

2. The Planning Authority generally welcomes the provision of a pedestrian/cyclist connection between the Somerton area and the Lucan Shopping Centre. However, the proposed execution of which is not considered to be of an acceptable high standard. The Planning Authority notes the requirements of the Adamstown Planning Scheme and the need to create a high-quality connection between the Lucan Shopping Centre and the residential lands to the west. The Planning Authority considers the proposed connection to be substandard for the following reasons:
1. The pedestrian/cycle access should be uninterrupted and there should be a clear free and easy movement for 24 hours a day, 7 days a week. This has not been demonstrated through design.
 2. The pedestrian/cycle connection is not significantly overlooked or provided with perceived passive surveillance.
 3. The safety and comfort of users is not apparent in the proposed design and layout. It is proposed to intersect the pedestrian access with a service road to the west of the site and by a system of access-control by using manual swing gates. The gates by default will be temporarily closed when any delivery vehicles have to pass and then reopen. The movement of vehicles along the western boundary will thereby hinder the free movement of pedestrians and cyclists. This is not acceptable to the Planning Authority.
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6. Roads.
1. Subject to the above Additional Information item 2 (pedestrian link), the applicant is requested to submit a revised layout showing a redesign for pedestrian and cyclist entry point from Somerton development to the proposed development facilitating direct and unrestricted pedestrian and cyclist access with a minimum 2.5m width of pedestrian and cycle lane connecting with the Somerton development.

2.2. Response to AIR Items 2 and 6.1

As illustrated in Figure 2.1 (two pages overleaf), the proposed design provides for a ca. 7 metres wide pedestrian/ cycle access to the Somerton residential development, providing ample space for pedestrians and cyclists and surpassing the minimum width of 2.5 metres noted in the AIR.

Access through this area shall be manually controlled via swing gates, with such an arrangement needed for safety reasons to ensure that the general public do not encroach into vehicle turning, servicing and delivery areas to the north and south of this access. The gates will accommodate pedestrian and cyclist access from the adjoining Somerton residential development to the Shopping Centre, and east towards Newcastle Road. A 3D view of revised access is shown Figure 2.2 (two pages overleaf).

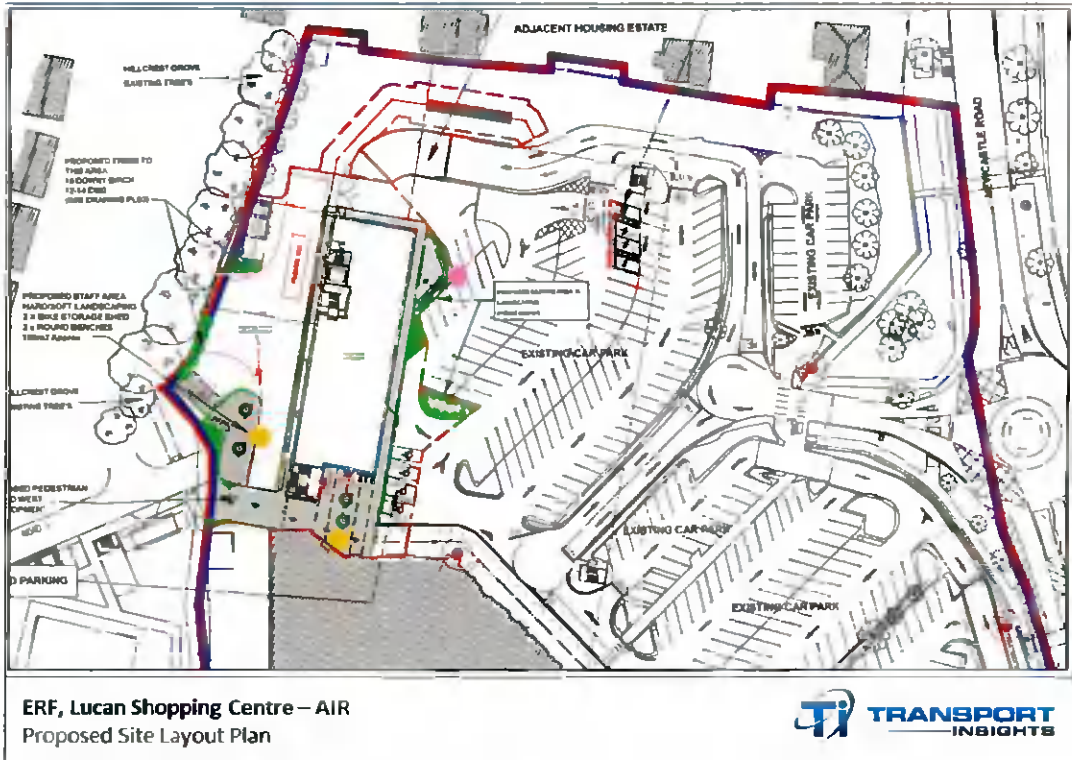
The access benefits from passive surveillance (during trading hours) from windows along the western façade of the new unit, in addition to being partially overlooked from the Somerton development to the west.

Deliveries to the new unit, estimated at 4 no. movements per week, occur during evening-time hours, i.e. towards the end of trading or post-trading hours, whereas twice weekly refuse collection activities occur between 07:00-09:00hrs. In both instances, vehicles will approach the servicing area to the rear of the new unit from the south, and egress using the same route. Delivery and refuse collection activities shall occur to the rear (west) of the new unit. The route for deliveries was carefully reconsidered by the design team in response to the AIR, and as per the initial design considerations, it remains the case that it is not possible to adequately and safely provide an alternative route. For instance, an alternative front of unit arrangement, would mean elevated potential for conflict between large vehicles and vulnerable road users within the customer car park. As such, extending the existing route from the south to include the new extension, and servicing it from the rear, is considered the only viable solution.

In light of the above, pedestrian and cyclist movement through this access will be unimpeded during day-time hours (07:00-22:30hrs, seven days a week) for all but two short intervals throughout the week. Any delay experienced by pedestrians and cyclists would be comparable to that experienced in crossing a public road at a signalised pedestrian or toucan crossing.

For the security and safety of the general public, it is proposed that the access from Somerton be closed during night-time hours (22:30-07:00hrs) when the Shopping Centre is closed and there are no persons on-site. Access from the west (Somerton) to the east (Newcastle Road and beyond) would instead be accommodated on the existing public road network to the south, with such routes benefitting from enhanced passive surveillance along their entire length.

Figure 2.1 Revised Site Layout Plan*



*Image courtesy of Jennings Design Studio (Drawing No. PA-FI-03) with supplemental annotation by Transport Insights

Figure 2.2 Eye Level CGI View of Somerton Link to Lucan SC*



The above response addresses **Items 2 and 6.1** of the AIR.

3. Item 6.2

3.1. AIR Requirement

2. The applicant shall submit a revised TTA with correct factors applied to background traffic flows. Applicant shall also implement some mitigation measures in the revised TTA showing measures taken to reduce existing and future traffic congestion at four-arm Newcastle Road/Shopping centre access/Esker Drive roundabout, as SDCC roads section have concerns with the existing traffic congestion issues at four-arm Newcastle Road/Shopping centre access/Esker Drive roundabout and to its close proximity to N4.

3.2. Response to Item 6.2

Revised TTA

A revised TTA with correct factors applied to background traffic flows is separately submitted in response to the AIR. The revisions have been applied to the relevant background Saturday traffic flows for Junction D: N4 Junction 4, North in Table 6.2, 6.5 and 6.9 in addition to revising related references within the paragraph following Table 6.9, Figure 6.1 and the Traffic Impact Assessment paragraph in Section 7 of the revised TTA. This addresses the first part of the **Item 6.2**.

This Note clarifies the existing capacity, and proposed mitigation measures to reduce future traffic congestion at the four-arm Newcastle Road/ Lucan Shopping Centre Access/ Esker Drive roundabout.

Newcastle Road/ Lucan SC Access/ Esker Drive Roundabout Traffic Modelling

The second part of Item 6.2 advises mitigation measures should be considered for the four-arm Newcastle Road/ Lucan Shopping Centre Access/ Esker Drive roundabout. To address this part of Item 6.2 existing and future (including potential development related traffic generation) traffic flows at the roundabout were analysed. With the focus of this analysis on the Newcastle Road/ Lucan Shopping Centre Access/ Esker Drive roundabout, it is noted, the AM and PM peak hours at the roundabout differ from those presented in the TTA, as those peak hours considered all four junctions surveyed. The roundabout specific AM and PM peak hour analysed, informed by the raw traffic survey data, are as follows:

- Friday AM Peak Hour, 11:45-12:44hrs;
- Friday PM Peak Hour, 16:45-17:44hrs;
- Saturday AM Peak Hour; 11:45-12:44hrs; and
- Saturday PM Peak Hour; 16:00-16:59hrs.

Appendix A summarises the AM and PM peak hour background traffic flows adjusted to pre-Covid traffic levels utilising the same factors (1.28 and 1.65, respectively) and methodology as detailed in Section 6.2 of the TTA.

Analysis of the roundabout was undertaken using Junctions 9 ARCADY module traffic modelling software. The software modelled the potential traffic impacts at the roundabout, providing analysis of the Ratio of Flow to Capacity (RFC), average queue length and average delay per vehicle on each approach arm of the roundabout.

The existing roundabout can experience peak periods of congestion, and to ensure this was reflected in the traffic model, video recordings of the traffic surveys were reviewed to establish the maximum queue length per arm during the AM and PM peak hours analysed. Queue lengths of ca. 25 PCUs on R120 Newcastle Road (S) (e.g. Friday 12:09 & Saturday 16:28), ca. 5 PCUs on Lucan Shopping Centre Access (e.g. Friday 16:58 & Saturday 12:22) and ca. 10 PCUs on R120 Newcastle Road (N) (e.g. Friday 16:48 & Saturday 12:20) were observed. The traffic model was calibrated to reflect the observed queue lengths. Appendix B contains screenshots of the observed queue lengths from the traffic surveys.

The assumed year of opening for the proposed development is 2022, as per the TTA. To analysis the potential traffic impact and possible mitigation measures required to minimise said impact, three scenarios were developed, detailed as follows:

- **Do-Nothing Scenario:** It is first necessary to establish background traffic conditions at the roundabout in the without proposed development or 'do-nothing' scenario. Such background traffic flows have been determined for the horizon year using relevant Transport Infrastructure Ireland guidance.
- **Do-Minimum Scenario:** A second scenario comprising the traffic flows from the do-nothing scenario in addition to traffic generated by the proposed development was developed, referred to as the do-minimum scenario. This scenario indicates the potential impact of development related traffic flows at the roundabout and indicates which junction arms may need mitigation measure(s).
- **Do-Something Scenario:** This final scenario represents traffic conditions following completion of the proposed development with associated mitigation measures identified following review of modelling outputs for the do-nothing and do-minimum scenarios. This is referred as the do-something scenario.

Tables 3.1 and Table 3.2 (both overleaf) present the traffic modelling outputs for the AM and PM peak hours respectively for Friday at the four-arm Newcastle Road/ Lucan Shopping Centre Access/ Esker Drive Roundabout for the do-nothing and do-minimum scenario. The subsequent Tables 3.3 and 3.4 present the equivalent modelling outputs for the Saturday. Detailed modelling results are contained in Appendix C of this Note.

Table 3.1 Do-Nothing and Do-Minimum Scenario: Friday AM Peak

Junction Arm	Friday AM – Do-Nothing			Friday AM – Do-Minimum		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
YoO (2022)						
Esker Drive	1.0	10.83	0.50	1.1	11.81	0.53
R120 Newcastle Road (S)	31.4	186.68	1.11	45.6	264.45	1.17
Lucan Shopping Centre Access	5.5	39.97	0.88	9.3	57.97	0.96
R120 Newcastle Road (N)	11.9	37.09	0.95	18.0	52.16	0.99
YoO+15 (2037)						
Esker Drive	1.6	14.80	0.62	1.7	15.91	0.65
R120 Newcastle Road (S)	154.9	913.29	1.46	176.4	1,089.36	1.50
Lucan Shopping Centre Access	20.0	104.75	1.08	32.1	175.06	1.15
R120 Newcastle Road (N)	114.9	339.40	1.17	149.0	432.83	1.22

Table 3.2 Do-Nothing and Do-Minimum Scenario: Friday PM Peak

Junction Arm	Friday PM – Do-Nothing			Friday PM – Do-Minimum		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
YoO (2022)						
Esker Drive	0.8	8.72	0.45	0.9	9.21	0.47
R120 Newcastle Road (S)	32.8	156.08	1.09	44.8	214.09	1.12
Lucan Shopping Centre Access	5.5	43.40	0.88	9.1	68.65	0.95
R120 Newcastle Road (N)	12.0	45.11	0.95	16.7	59.95	0.98
YoO+15 (2037)						
Esker Drive	1.2	10.94	0.54	1.2	11.08	0.56
R120 Newcastle Road (S)	188.3	940.94	1.39	201.5	1,022.81	1.42
Lucan Shopping Centre Access	31.4	201.66	1.07	55.7	329.09	1.13

Junction Arm	Friday PM – Do-Nothing			Friday PM – Do-Minimum		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
R120 Newcastle Road (N)	127.1	380.17	1.16	148.6	447.01	1.18

As the preceding Tables 3.1 and 3.2 show, 3 of the 4 arms of the roundabout, R120 Newcastle Road (N & S) and Lucan Shopping Centre Access, have RFCs ranging from 0.88 to 1.50 for both scenarios. These RFC values reflect the existing congestion and increased congestion (due to assumed background traffic growth in YoO+15) at the roundabout. Esker Drive RFCs remains well below 0.85 for both scenarios. The following Tables 3.3 (below) and Table 3.4 (overleaf) present the traffic modelling outputs for the AM and PM peak hour for Saturday.

Table 3.3 Do-Nothing and Do-Minimum Scenario: Saturday AM Peak

Junction Arm	Saturday AM – Do-Nothing			Saturday AM – Do-Minimum		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
YoO (2022)						
Esker Drive	1.6	15.17	0.63	1.9	17.42	0.67
R120 Newcastle Road (S)	12.4	58.95	0.97	17.2	84.83	1.00
Lucan Shopping Centre Access	5.8	44.43	0.89	10.9	78.95	0.98
R120 Newcastle Road (N)	12.2	38.15	0.95	19.6	58.08	0.98
YoO+15 (2037)						
Esker Drive	3.5	27.09	0.80	3.4	26.84	0.80
R120 Newcastle Road (S)	117.3	489.82	1.23	146.4	619.15	1.27
Lucan Shopping Centre Access	33.7	247.11	1.10	65.5	434.22	1.17
R120 Newcastle Road (N)	136.5	327.66	1.14	184.4	454.83	1.18

Table 3.4 Do-Nothing and Do-Minimum Scenario: Saturday PM Peak

Junction Arm	Saturday AM – Do-Nothing			Saturday AM – Do-Minimum		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
YoO (2022)						
Esker Drive	1.8	18.13	0.66	2.1	20.83	0.69
R120 Newcastle Road (S)	32.1	166.00	1.08	48.0	253.09	1.12
Lucan Shopping Centre Access	5.6	25.49	0.87	8.1	33.74	0.93
R120 Newcastle Road (N)	12.1	32.25	0.95	16.9	42.97	0.98
YoO+15 (2037)						
Esker Drive	5.6	49.47	0.87	6.3	54.02	0.89
R120 Newcastle Road (S)	204.2	1,022.91	1.38	219.6	1,116.97	1.42
Lucan Shopping Centre Access	15.7	67.53	1.02	30.8	140.55	1.08
R120 Newcastle Road (N)	120.6	298.27	1.16	147.5	359.56	1.19

Similar to the Friday model outputs, 3 of the 4 arms of the roundabout, R120 Newcastle Road (N & S) and Lucan Shopping Centre Access, have RFCs ranging from 0.87 to 1.42 for both scenarios. These RFC values reflect the existing congestion and increased congestion (due to assumed background traffic growth in YoO+15) at the roundabout. Esker Drive RFCs are generally below 0.85 except for YoO+15 where the RFCs for both scenarios are ca. 0.88.

As can be seen from model results presented in the preceding tables, the majority of arms on the existing roundabout experience congestion during the do-nothing scenario, before the impact of any traffic generated by the proposed development is modelled. The addition of development traffic (do-minimum scenario) is forecast to have a slightly negative impact on the performance of the four-arm roundabout. Considering the modelling results presented and to address the second part of Item 6.2 of the AIR, minor mitigation works are now proposed at the roundabout to improve traffic flow through it. The proposed mitigation measures are to be undertaken in agreement with SDCC (and therefore are outside the application's red line boundary). Figure 3.1 (overleaf) illustrates the proposed mitigation works on the relevant arm of the R120 Newcastle Road/ Lucan Shopping Access/ Esker Drive roundabout.

Figure 3.1 Proposed Mitigation Measure at Roundabout (Concept Design Status)



As illustrated in the preceding Figure 3.1, minor mitigation measures are proposed on the Newcastle Road north and south arms as well as on the Lucan Shopping Centre arm, summarised as follows:

- Newcastle Road (north) widen existing entry width from 5.0 metres to 5.30 metres and change the existing entry radius from 33.7 metres to 22.70 metres;
- Newcastle Road (south) widen existing entry width from 4.0 metres to 4.20 metres and adjust existing road marking to provide an entry radius of 20.70 metres; and
- Lucan Shopping Centre Access arm widen existing entry width from 5.0 metres to 6.30 metres and change the existing entry radius from 16.3 metres to 23.60 metres.

The mitigation measures proposed, to be undertaken in agreement with SDCC, are minor and mainly involve kerb realignment at each entry arm of the roundabout. The impact of these mitigation measures in the form of the do-something scenario has been modelled with Tables 3.5 and 3.6 (both overleaf) presenting the modelling results for the Friday and Saturday peak hours respectively. For easy of comparison the RFC value from the Do Nothing (DN) scenario (i.e. Tables 3.2 to 3.5) is also shown in the tables below. Detailed modelling results are contained in Appendix D.

Table 3.5 Do-Something Scenario Friday AM and PM Peak

Junction Arm	Friday AM (11:45-12:44hrs) Do-Something			Do Nothing Scn	Friday PM (16:45-17:44hrs) Do-Something			Do Nothing Scn
	Queue (Veh)	Delay (s)	RFC	RFC	Queue (Veh)	Delay (s)	RFC	RFC
YoO (2022)								
Esker Drive	1.1	12.02	0.53	0.50	0.9	9.29	0.47	0.45
R120 Newcastle Road (S)	28.7	170.52	1.10	1.11	25.4	120.44	1.07	1.09
Lucan Shopping Centre Access	5.4	35.90	0.88	0.88	4.8	33.98	0.86	0.88
R120 Newcastle Road (N)	13.0	39.19	0.96	0.95	11.3	41.74	0.94	0.95
YoO+15 (2037)								
Esker Drive	1.9	17.21	0.67	0.62	1.3	11.57	0.57	0.54
R120 Newcastle Road (S)	147.8	849.45	1.43	1.46	170.7	824.17	1.36	1.39
Lucan Shopping Centre Access	17.8	81.33	1.05	1.08	24.9	150.31	1.04	1.07
R120 Newcastle Road (N)	120.8	345.85	1.17	1.17	121.7	354.81	1.15	1.16

Table 3.6 Do-Something Scenario Saturday AM and PM Peak

Junction Arm	Saturday AM (11:45-12:44hrs) Do-Something			Do Nothing Scn	Saturday PM (16:00-16:59hrs) Do-Something			Do Nothing Scn
	Queue (Veh)	Delay (s)	RFC	RFC	Queue (Veh)	Delay (s)	RFC	RFC
YoO (2022)								
Esker Drive	2.0	17.87	0.68	0.63	2.2	21.14	0.70	0.66
R120 Newcastle Road (S)	11.6	54.28	0.96	0.97	27.8	139.70	1.06	1.08
Lucan Shopping Centre Access	5.7	39.35	0.88	0.89	5.4	23.40	0.87	0.87
R120 Newcastle Road (N)	13.3	40.49	0.95	0.95	12.5	32.51	0.95	0.95

Junction Arm	Saturday AM (11:45-12:44hrs) Do-Something			Do Nothing Scn	Saturday PM (16:00-16:59hrs) Do-Something			Do Nothing Scn
	Queue (Veh)	Delay (s)	RFC	RFC	Queue (Veh)	Delay (s)	RFC	RFC
YoO+15 (2037)								
Esker Drive	4.1	31.91	0.83	0.80	7.8	66.81	0.92	0.87
R120 Newcastle Road (S)	118.0	481.74	1.22	1.23	188.4	918.17	1.35	1.38
Lucan Shopping Centre Access	29.8	198.32	1.07	1.10	16.3	57.96	1.02	1.02
R120 Newcastle Road (N)	156.8	378.61	1.15	1.14	118.7	289.93	1.16	1.16

As the preceding Tables 3.5 and 3.6 indicates modelling of the do-something scenario (background traffic growth, additional traffic generated by the development, plus proposed mitigation measures) demonstrate that said mitigation works improve the traffic flow at the roundabout such that the do-something RFC vales are similar to (and in some cases less than) the equivalent do-nothing (background traffic growth only) RFC values. Essentially the measures proposed mitigate the potential impact of the additional development traffic at the roundabout, such that it would operate at a similar capacity where no additional development traffic added. The proposed mitigation measures are considered to satisfactorily address the second part of the Item 6.2 of the AIR.

4. Item 6.3

4.1. AIR Requirement

3. The applicant shall submit information with regards to their proposed bin/waste collection arrangement and bin storage and collection locations, including auto track analysis showing how bin truck can access and egress the site safely.

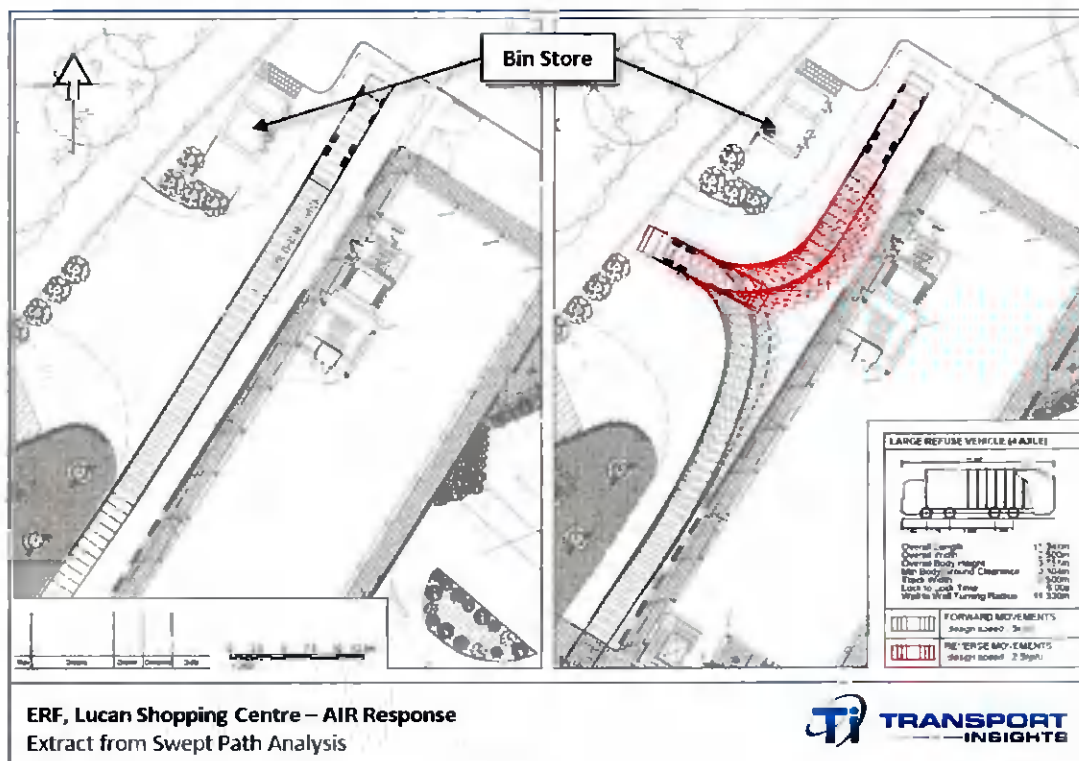
4.2. Response to Item 6.3

Refuse vehicle shall access the site via the existing vehicular access junction with the R120 Newcastle Road located to the southeast of the site. Refuse collection for the proposed development will maintain similar arrangement to the existing Shopping Centre, in that the refuse vehicle will access the existing service yard from the southeast of the site, travel the length of the servicing yard to the new servicing area to the rear of the proposed development and

collect refuse from the proposed bin store. The proposed bin store is located adjacent the proposed substation to the rear of the new unit. The refuse vehicle would then turn within the vehicle turning area proposed and travel back through the existing servicing area to reach Newcastle Road. Management of the Shopping Centre have advised refuse collection occurs twice weekly during the quiet morning period (07:00-09:00hrs). Given the infrequent occurrence of refuse collection during the quiet morning periods at the Centre, the temporary interruption of the pedestrian link from the Somerton development to facilitate the refuse vehicle accessing the new service yard from the existing yard is considered negligible. Centre personal will be on hand to operate the manual swing gates to allow access for the refuse vehicle, with the gates maintained in a closed position (i.e. block vehicle access) other than temporally opening to allow the refuse vehicle access the new service yard.

A swept path analysis has been undertaken to demonstrate the suitability of servicing arrangement in accommodating a large refuse vehicle to access, circulate within and egress the proposed servicing area. The following Figure 4.1 presents an extract of the swept path analysis drawing with a to-scale drawing included in Appendix E.

Figure 4.1 Extract from Swept Path Analysis



5. Item 6.4

5.1. AIR Requirement

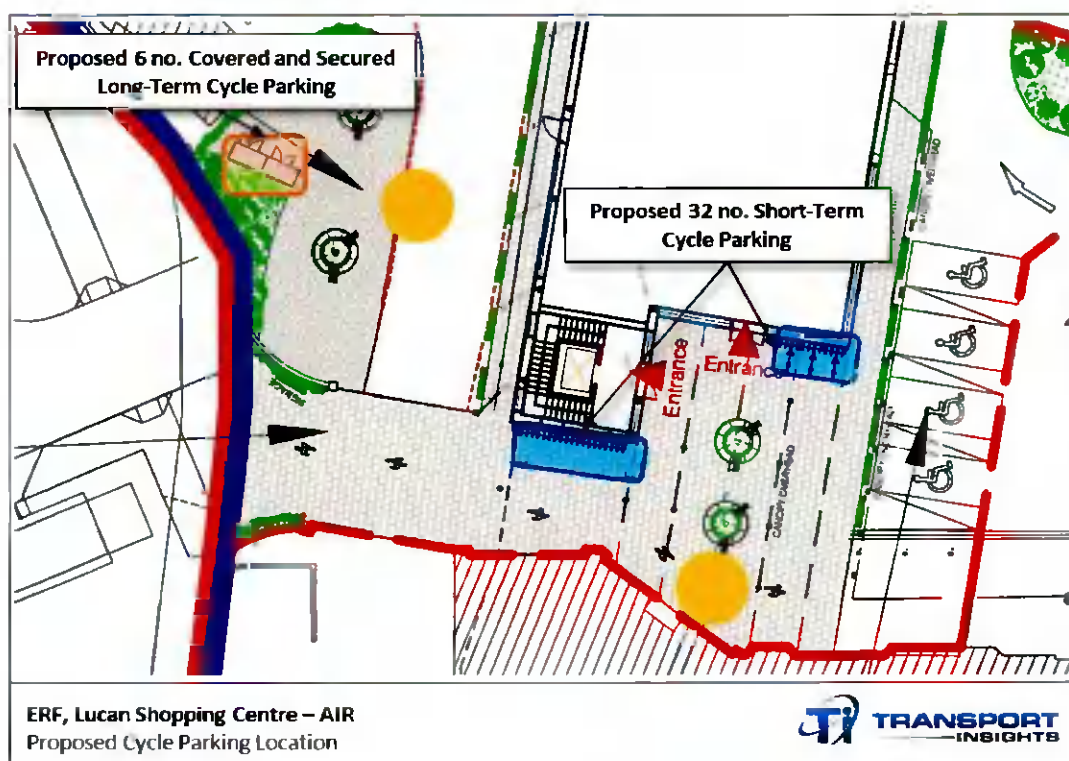
4. The applicant shall submit a revised layout showing, bicycle parking spaces for long term and short term in accordance with SDCC CDP 2016-2022 bicycle parking spaces standards.

5.2. Response to Item 6.4

As highlighted in the TTA, Table 11.22 of the current *South Dublin Development Plan* sets out a minimum requirement of cycle parking for different land uses. The layout drawings have been revised to indicate that the proposed development is to provide no. 32 covered short-term cycle parking spaces in the vicinity of the pedestrian accesses to the new building. In addition, 6 no. long-term cycle parking spaces in the form of secure and lockable bike storage sheds (2 no. 3 bike storage sheds) are also indicated on the drawings. An extract of the Architects' proposed floorplan drawing is presented in the following Figure 5.1, which illustrates the location of the proposed short- and long-term cycle parking at the proposed development.

This response is considered to satisfactorily address Item 6.4 of the AIR.

Figure 5.1 Extract from Revised Site Layout Plan



*Image courtesy of Jennings Design Studio (Drawing No. PA-FI-03) with supplemental annotation by Transport Insights

Appendix A AM and PM Peak Hour Traffic Figures

Table 1 Traffic Survey Results Summary – Total Approach Flows (PCUs)

Junction Location	Friday		Saturday	
	AM Peak (11:45hrs- 12:44hrs)	PM Peak (16:45hrs- 17:44hrs)	AM Peak (11:45hrs- 12:44hrs)	PM Peak (16:00hrs- 16:59hrs)
Esker Drive	283	305	330	350
R120 Newcastle Road (S)	565	706	786	670
Lucan Shopping Centre Access	466	445	447	655
R120 Newcastle Road (N)	1,016	955	1,170	1,270
Total Approach Flow	2,330	2,411	2,733	2,945

The traffic volumes recorded during the Friday and Saturday survey for the respective AM and PM peak hours were adjusted to pre Covid-19 traffic volumes using the factors 1.28 and 1.65 respectively. These factors are the same as those explained within Section 6.2 of the TTA.

For reference, PCU values are as follows: Motorbike (M/C) = 0.4pcu, Car = 1.0 PCU, Light Good Vehicles (LGV) = 1.0, Ordinary Goods Vehicles 1 (OGV 1)= 1.5PCU, Ordinary Goods Vehicles 2 (OGV 2)= 2.3CU and Public Service Vehicles/ Buses (PSV) = 2.0PCU

Appendix B Traffic Survey Screenshots

Newcastle Road (S) Arm - Friday 19th AM 12:09 queue at service access, estimated queue length 25PCUs



Newcastle Road (S) Arm - Saturday 20th PM 16:28 queue at service access, estimated queue length 25PCUs



Lucan Shopping Centre Arm - Friday 19th 16:58 estimated queue length 5 PCUs



Lucan Shopping Centre Arm – Saturday 20th 12:22 estimated queue length 5 PCUs



Newcastle Road (N) Arm – Friday 19th PM 16:48 estimated queue length 10 PCUs



Newcastle Road (N) Arm – Saturday 20th AM 12:20 estimated queue length 10 PCUs



Appendix C Do Nothing and Do Minimum Model Outputs

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 378777 software@trl.co.uk www.trlsoftware.co.uk
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Filename: 20211116 C664_1 Lucan Arcady Lane Sim Friday AM v1.20.j9
 Path: C:\Users\Gabrielalha\Desktop\Arcady lucan\V1.20
 Report generation date: 02/12/2021 11:56:57

- »2021 (Base Year) - Do Nothing, AM Friday
- »2022 (YoO) - Do Nothing, AM Friday
- »2022 (YoO) - Do Minimum, AM Friday
- »2037 (YoO+15) - Do Nothing, AM Friday
- »2037 (YoO+15) - Do Minimum, AM Friday

Summary of junction performance

AM Friday			
	Queue (Veh)	Delay (s)	RFC
2021 (Base Year) - Do Nothing			
1 - Esker Road	0.9	10.40	0.48
2 - R120 Newcastle Road (S)	25.3	154.23	1.08
3 - Lucan Shopping Centre	5.1	38.01	0.37
4 - R120 Newcastle Road (N)	10.1	32.65	0.94
2022 (YoO) - Do Nothing			
1 - Esker Road	1.0	10.83	0.50
2 - R120 Newcastle Road (S)	31.4	156.68	1.11
3 - Lucan Shopping Centre	5.5	39.97	0.88
4 - R120 Newcastle Road (N)	11.9	37.09	0.95
2022 (YoO) - Do Minimum			
1 - Esker Road	1.1	11.81	0.53
2 - R120 Newcastle Road (S)	45.0	244.45	1.17
3 - Lucan Shopping Centre	9.3	57.97	0.96
4 - R120 Newcastle Road (N)	18.0	52.16	0.99
2037 (YoO+15) - Do Nothing			
1 - Esker Road	1.6	14.80	0.62
2 - R120 Newcastle Road (S)	154.9	911.29	1.46
3 - Lucan Shopping Centre	20.0	104.79	1.08
4 - R120 Newcastle Road (N)	111.9	329.42	1.17
2037 (YoO+15) - Do Minimum			
1 - Esker Road	1.7	15.91	0.65
2 - R120 Newcastle Road (S)	176.4	1089.36	1.50
3 - Lucan Shopping Centre	32.1	179.06	1.15
4 - R120 Newcastle Road (N)	149.0	432.83	1.22

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

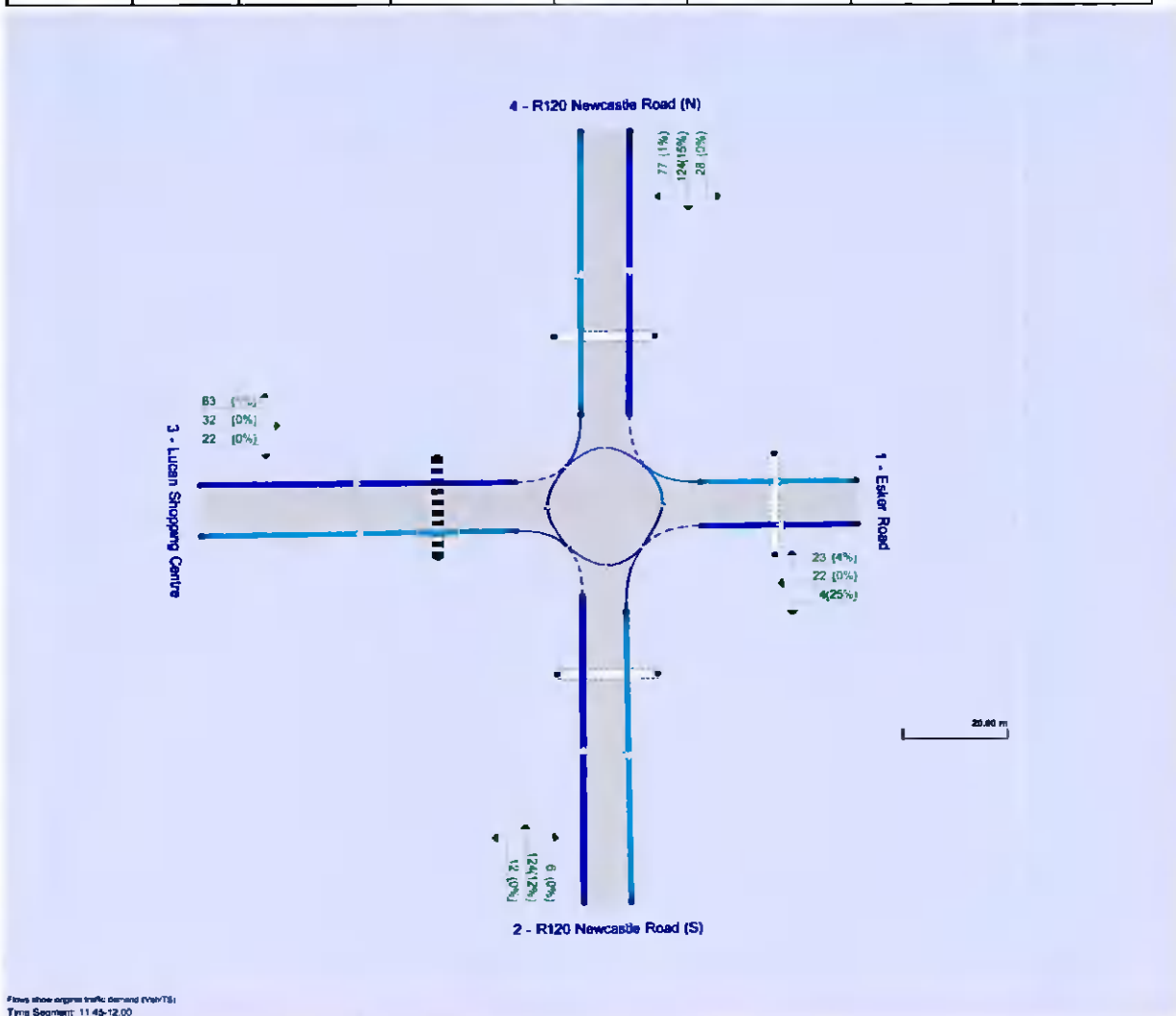
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

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



Flows show origin traffic demand (Veh/TS)
Time Segment: 11:45-12:00

The junction diagram reflects the last run of Junctions

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D01	2021 (Base Year) - Do Nothing	AM Friday	DIRECT	11:45	12:45	60	15	✓
D03	2022 (YoO) - Do Nothing	AM Friday	DIRECT	11:45	12:45	60	15	✓
D05	2022 (YoO) - Do Minimum	AM Friday	DIRECT	11:45	12:45	60	15	✓
D07	2037 (YoO+15) - Do Nothing	AM Friday	DIRECT	11:45	12:45	60	15	✓
D09	2037 (YoO+15) - Do Minimum	AM Friday	DIRECT	11:45	12:45	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 (Base Year) - Do Nothing, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	61.62	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I* - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.00	4.9	35.7	32.0	7.0	
3 - Lucan Shopping Centre	2.90	5.00	2.6	16.3	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.00	0.7	33.7	32.0	12.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queuing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	5.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.586	300.618
3 - Lucan Shopping Centre	0.523	263.412
4 - R120 Newcastle Road (N)	0.646	381.419

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		-53.75
3 - Lucan Shopping Centre	Direct		-19.00
4 - R120 Newcastle Road (N)	Direct		-33.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D01	2021 (Base Year) - Do Nothing	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
11:45 - 12:00	From				
	1 - Esker Road	0.00	4.00	22.00	23.00
	2 - R120 Newcastle Road (S)	6.00	1.00	12.00	124.00
	3 - Lucan Shopping Centre	32.00	22.00	0.00	83.00
	4 - R120 Newcastle Road (N)	28.00	124.00	77.00	0.00

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
12:00 - 12:15	From				
	1 - Esker Road	0.00	5.00	27.00	39.00
	2 - R120 Newcastle Road (S)	10.00	1.00	6.00	110.00
	3 - Lucan Shopping Centre	20.00	27.00	0.00	60.00
	4 - R120 Newcastle Road (N)	48.00	131.00	77.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	1.00	37.00	42.00
		2 - R120 Newcastle Road (S)	10.00	1.00	8.00	125.00
		3 - Lucan Shopping Centre	17.00	14.00	0.00	68.00
		4 - R120 Newcastle Road (N)	45.00	149.00	87.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	29.00	50.00
		2 - R120 Newcastle Road (S)	8.00	1.00	12.00	130.00
		3 - Lucan Shopping Centre	29.00	28.00	0.00	65.00
		4 - R120 Newcastle Road (N)	45.00	140.00	62.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	25	0	4
		2 - R120 Newcastle Road (S)	0	100	0	12
		3 - Lucan Shopping Centre	0	0	0	1
		4 - R120 Newcastle Road (N)	0	15	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	8
		2 - R120 Newcastle Road (S)	0	100	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	6	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	14
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	12	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	100	0	9
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	9	9	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.48	10.40	0.9	B	70.75	283.00
2 - R120 Newcastle Road (S)	1.68	154.23	25.3	F	141.18	564.73
3 - Lucan Shopping Centre	0.87	36.81	5.1	E	116.25	464.99
4 - R120 Newcastle Road (N)	0.94	32.65	10.1	D	254.27	1017.07

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	49.00	49.00	219.70	5.65	173.50	0.282	48.61	64.06	0.0	0.4	7.185	A
2 - R120 Newcastle Road (S)	143.00	143.00	120.33	5.65	157.89	0.906	136.59	147.99	0.0	6.4	35.501	E
3 - Lucan Shopping Centre	137.00	137.00	147.94	5.65	157.65	0.869	131.88	108.97	0.0	5.1	30.630	F
4 - R120 Newcastle Road (N)	229.00	229.00	58.67	5.65	282.69	0.810	225.09	221.16	0.0	3.9	14.764	B

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	71.00	71.00	235.12	6.74	170.89	0.416	70.69	78.04	0.4	0.7	8.955	A
2 - R120 Newcastle Road (S)	127.00	127.00	142.34	6.74	152.94	0.828	127.87	163.47	6.4	5.5	37.037	E
3 - Lucan Shopping Centre	107.00	107.00	160.39	6.74	155.21	0.689	109.76	109.82	5.1	2.4	20.847	F
4 - R120 Newcastle Road (N)	256.00	256.00	58.82	6.74	296.32	0.862	254.34	211.33	3.9	5.6	20.465	D

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	80.00	80.00	250.22	8.26	166.15	0.481	79.79	70.57	0.7	0.9	10.396	B
2 - R120 Newcastle Road (S)	144.00	144.00	167.22	8.26	133.12	1.085	129.31	162.79	5.5	20.2	107.651	F
3 - Lucan Shopping Centre	99.00	99.00	166.97	8.26	149.02	0.664	99.29	129.56	2.4	2.1	18.239	F
4 - R120 Newcastle Road (N)	284.00	284.00	41.33	8.26	302.77	0.938	279.46	224.93	5.6	10.1	32.646	D

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	83.00	83.00	233.49	8.26	175.75	0.472	83.01	81.45	0.9	0.9	9.705	A
2 - R120 Newcastle Road (S)	151.00	151.00	143.35	8.26	148.37	1.013	145.69	173.15	20.2	25.5	154.215	F
3 - Lucan Shopping Centre	122.00	122.00	185.60	8.26	139.99	0.872	118.92	103.43	2.1	5.1	35.074	E
4 - R120 Newcastle Road (N)	248.00	248.00	64.27	8.26	285.87	0.884	250.68	240.26	10.1	7.5	27.313	D

2022 (YoO) - Do Nothing, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	72.13	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D03	2022 (YoO) - Do Nothing	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	4.00	22.00	23.00
	2 - R120 Newcastle Road (S)	6.00	1.00	13.00	126.00
	3 - Lucan Shopping Centre	33.00	22.00	0.00	84.00
	4 - R120 Newcastle Road (N)	28.00	126.00	87.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	5.00	27.00	40.00
		2 - R120 Newcastle Road (S)	10.00	1.00	6.00	112.00
		3 - Lucan Shopping Centre	20.00	27.00	0.00	61.00
		4 - R120 Newcastle Road (N)	49.00	133.00	78.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	1.00	38.00	43.00
		2 - R120 Newcastle Road (S)	10.00	1.00	8.00	127.00
		3 - Lucan Shopping Centre	17.00	14.00	0.00	69.00
		4 - R120 Newcastle Road (N)	46.00	152.00	88.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	29.00	51.00
		2 - R120 Newcastle Road (S)	8.00	1.00	12.00	132.00
		3 - Lucan Shopping Centre	29.00	28.00	0.00	66.00
		4 - R120 Newcastle Road (N)	46.00	142.00	63.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	25	0	4
		2 - R120 Newcastle Road (S)	0	100	0	12
		3 - Lucan Shopping Centre	0	0	0	1
		4 - R120 Newcastle Road (N)	0	15	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	8
		2 - R120 Newcastle Road (S)	0	100	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	6	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	14
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	12	0	0

Heavy Vehicle Percentages

 12:30 -
12:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	2
	2 - R120 Newcastle Road (S)	0	100	0	9
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	9	9	2	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.50	10.83	1.0	B	71.75	287.00
2 - R120 Newcastle Road (S)	1.11	186.48	31.4	F	143.40	573.61
3 - Lucan Shopping Centre	0.88	39.97	5.5	E	117.50	469.99
4 - R120 Newcastle Road (N)	0.95	37.08	11.9	F	260.52	1042.09

Main Results for each time segment

11:45 - 12:00

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	49.00	49.00	230.82	5.65	167.28	0.293	48.59	64.77	0.0	0.4	7.557	A
2 - R120 Newcastle Road (S)	146.00	146.00	129.89	5.65	152.89	0.955	137.23	149.52	0.0	8.8	44.773	E
3 - Lucan Shopping Centre	139.00	139.00	147.82	5.65	157.73	0.891	133.49	119.30	0.0	5.5	32.149	D
4 - R120 Newcastle Road (N)	241.00	241.00	59.40	5.65	285.31	0.845	236.19	221.91	0.0	4.8	16.962	C

12:00 - 12:15

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	72.00	72.00	238.42	6.74	169.08	0.426	71.68	79.04	0.4	0.7	9.210	A
2 - R120 Newcastle Road (S)	129.00	129.00	144.57	6.74	150.37	0.895	130.61	165.54	8.8	7.1	49.227	D
3 - Lucan Shopping Centre	108.00	108.00	163.94	6.74	152.61	0.707	110.92	111.22	5.5	2.6	22.869	D
4 - R120 Newcastle Road (N)	260.00	260.00	58.86	6.74	296.26	0.877	258.59	216.00	4.8	6.2	22.728	C

12:15 - 12:30

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	82.00	82.00	253.31	8.26	164.61	0.498	81.76	71.31	0.7	1.0	10.828	B
2 - R120 Newcastle Road (S)	146.00	146.00	169.85	8.26	131.76	1.111	129.05	165.22	7.1	34.1	126.524	F
3 - Lucan Shopping Centre	100.00	100.00	167.81	8.26	148.61	0.673	100.43	131.09	2.6	2.2	18.881	E
4 - R120 Newcastle Road (N)	289.00	289.00	41.26	8.26	302.78	0.855	283.37	226.98	6.2	11.9	37.089	E

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalled level of service
1 - Esker Road	84.00	84.00	236.93	8.26	174.10	0.483	84.03	82.40	1.0	0.9	9.996	A
2 - R120 Newcastle Road (S)	153.00	153.00	145.60	8.26	146.99	1.035	145.28	175.36	24.1	31.8	186.677	F
3 - Lucan Shopping Centre	123.00	123.00	186.47	8.26	139.45	0.882	119.68	104.40	2.2	5.5	39.968	E
4 - R120 Newcastle Road (N)	252.00	252.00	64.08	8.26	286.02	0.881	255.26	242.08	11.9	8.6	31.689	D

2022 (YoO) - Do Minimum, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	100.00	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D05	2022 (YoO) - Do Minimum	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	4.00	26.00	23.00
	2 - R120 Newcastle Road (S)	6.00	1.00	13.00	126.00
	3 - Lucan Shopping Centre	35.00	25.00	0.00	92.00
	4 - R120 Newcastle Road (N)	28.00	126.00	87.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	5.00	31.00	40.00
		2 - R120 Newcastle Road (S)	10.00	1.00	7.00	112.00
		3 - Lucan Shopping Centre	23.00	30.00	0.00	69.00
		4 - R120 Newcastle Road (N)	49.00	133.00	87.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	1.00	41.00	43.00
		2 - R120 Newcastle Road (S)	10.00	1.00	9.00	127.00
		3 - Lucan Shopping Centre	20.00	17.00	0.00	77.00
		4 - R120 Newcastle Road (N)	46.00	152.00	97.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	33.00	51.00
		2 - R120 Newcastle Road (S)	8.00	1.00	13.00	132.00
		3 - Lucan Shopping Centre	32.00	31.00	0.00	74.00
		4 - R120 Newcastle Road (N)	46.00	142.00	71.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	25	0	4
		2 - R120 Newcastle Road (S)	0	100	0	12
		3 - Lucan Shopping Centre	0	0	0	1
		4 - R120 Newcastle Road (N)	0	15	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	8
		2 - R120 Newcastle Road (S)	0	100	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	6	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	14
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	12	0	0

Heavy Vehicle Percentages

 12:30 -
12:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	2
	2 - R120 Newcastle Road (S)	0	100	0	9
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	9	9	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.53	11.81	1.1	B	75.50	301.99
2 - R120 Newcastle Road (S)	1.17	64.45	45.6	F	144.11	576.44
3 - Lucan Shopping Centre	0.96	57.97	9.3	F	131.25	524.99
4 - R120 Newcastle Road (N)	0.99	52.16	18.0	F	267.03	1068.11

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	53.00	53.00	233.03	5.65	166.68	0.318	52.54	65.90	0.0	0.5	7.854	A
2 - R120 Newcastle Road (S)	146.00	146.00	133.79	5.65	150.83	0.968	136.49	151.79	0.0	9.5	47.765	D
3 - Lucan Shopping Centre	152.00	152.00	147.13	5.65	158.13	0.961	142.73	123.14	0.0	9.3	45.976	E
4 - R120 Newcastle Road (N)	241.00	241.00	62.88	5.65	283.70	0.849	236.05	226.98	0.0	5.0	17.414	C

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	76.00	76.00	248.84	6.74	164.31	0.463	75.62	82.01	0.5	0.8	10.103	B
2 - R120 Newcastle Road (S)	130.00	130.00	156.67	6.74	143.67	0.902	129.98	167.79	9.5	9.5	61.857	F
3 - Lucan Shopping Centre	122.00	122.00	162.40	6.74	153.43	0.795	126.88	124.25	9.3	4.4	37.832	E
4 - R120 Newcastle Road (N)	269.00	269.00	65.40	6.74	292.55	0.919	265.45	223.88	5.0	8.5	29.312	D

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	262.16	8.26	160.70	0.529	84.75	73.61	0.8	1.1	11.806	B
2 - R120 Newcastle Road (S)	147.00	147.00	180.40	8.26	126.45	1.167	124.92	166.51	9.5	31.6	164.412	F
3 - Lucan Shopping Centre	114.00	114.00	163.05	8.26	151.49	0.753	115.10	142.27	4.4	3.3	25.507	D
4 - R120 Newcastle Road (N)	298.00	298.00	47.29	8.26	299.68	0.995	288.48	230.86	8.5	18.1	52.164	F

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	88.00	88.00	248.66	8.26	169.00	0.521	88.00	84.65	1.1	1.1	11.112	B
2 - R120 Newcastle Road (S)	154.00	154.00	158.42	8.26	140.17	1.090	139.48	178.24	31.6	46.1	264.446	F
3 - Lucan Shopping Centre	137.00	137.00	180.49	8.26	142.74	0.960	131.08	117.41	3.3	9.2	57.967	F
4 - R120 Newcastle Road (N)	280.00	260.00	68.50	8.26	284.58	0.914	264.82	243.06	18.1	13.3	49.926	E

2037 (YoO+15) - Do Nothing, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	403.85	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D07	2037 (YoO+15) - Do Nothing	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	5.00	26.00	28.00
	2 - R120 Newcastle Road (S)	7.00	1.00	14.00	152.00
	3 - Lucan Shopping Centre	38.00	26.00	0.00	100.00
	4 - R120 Newcastle Road (N)	34.00	153.00	92.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	6.00	32.00	47.00
		2 - R120 Newcastle Road (S)	12.00	1.00	7.00	133.00
		3 - Lucan Shopping Centre	24.00	32.00	0.00	72.00
		4 - R120 Newcastle Road (N)	58.00	159.00	92.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	1.00	44.00	50.00
		2 - R120 Newcastle Road (S)	12.00	1.00	10.00	154.00
		3 - Lucan Shopping Centre	20.00	17.00	0.00	81.00
		4 - R120 Newcastle Road (N)	54.00	183.00	104.00	4.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	5.00	35.00	60.00
		2 - R120 Newcastle Road (S)	10.00	1.00	14.00	158.00
		3 - Lucan Shopping Centre	35.00	34.00	0.00	78.00
		4 - R120 Newcastle Road (N)	55.00	171.00	74.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	28	0	5
		2 - R120 Newcastle Road (S)	0	100	0	14
		3 - Lucan Shopping Centre	0	0	0	1
		4 - R120 Newcastle Road (N)	0	18	2	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	9
		2 - R120 Newcastle Road (S)	0	100	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	7	7	2	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	16
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	14	0	0

Heavy Vehicle Percentages

 12:30 -
12:45

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	2
2 - R120 Newcastle Road (S)	0	100	0	11
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	10	11	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.62	14.80	1.6	B	84.75	338.99
2 - R120 Newcastle Road (S)	1.46	913.29	154.9	F	171.32	685.27
3 - Lucan Shopping Centre	1.08	104.75	20.1	F	139.24	556.98
4 - R120 Newcastle Road (N)	1.17	339.40	114.9	F	308.74	1234.97

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	59.00	59.00	254.04	5.65	149.52	0.395	58.36	71.01	0.0	0.6	9.806	A
2 - R120 Newcastle Road (S)	174.00	174.00	139.93	5.65	144.58	1.203	140.40	172.48	0.0	35.8	122.156	F
3 - Lucan Shopping Centre	164.00	164.00	156.80	5.65	151.33	1.054	144.09	123.53	0.0	19.9	75.288	F
4 - R120 Newcastle Road (N)	279.00	279.00	62.69	5.65	278.14	1.002	262.37	238.21	0.0	16.6	40.495	E

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	265.09	6.74	153.97	0.552	84.45	88.32	0.6	1.2	12.841	B
2 - R120 Newcastle Road (S)	153.00	153.00	163.54	6.74	137.16	1.097	136.53	186.00	33.8	90.0	295.064	F
3 - Lucan Shopping Centre	128.00	128.00	175.76	6.74	144.70	0.884	137.26	124.31	19.9	10.7	104.747	F
4 - R120 Newcastle Road (N)	309.00	309.00	69.41	6.74	286.52	1.076	284.00	243.61	16.6	41.7	100.964	F

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	95.00	95.00	266.93	8.26	158.47	0.599	94.75	77.70	1.2	1.4	14.056	B
2 - R120 Newcastle Road (S)	177.00	177.00	185.24	8.26	124.71	1.459	124.50	176.44	50.5	102.3	300.164	F
3 - Lucan Shopping Centre	118.00	118.00	170.82	8.26	147.98	0.797	124.14	138.91	10.7	4.5	43.153	E
4 - R120 Newcastle Road (N)	345.00	345.00	50.00	8.26	294.95	1.173	294.63	244.96	41.7	92.2	215.399	F

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	100.00	100.00	261.74	8.26	160.42	0.623	99.85	88.76	1.4	1.6	14.801	B
2 - R120 Newcastle Road (S)	183.00	183.00	170.27	8.26	128.95	1.380	128.90	191.32	102.3	156.4	913.287	F
3 - Lucan Shopping Centre	147.00	147.00	182.58	8.26	139.42	1.054	134.23	116.59	4.5	17.3	91.736	F
4 - R120 Newcastle Road (N)	301.00	301.00	71.42	8.26	279.36	1.081	279.09	245.39	92.2	114.1	339.398	F

2037 (YoO+15) - Do Minimum, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	495.55	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D09	2037 (YoO+15) - Do Minimum	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 -
12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	5.00	30.00	28.00
	2 - R120 Newcastle Road (S)	7.00	1.00	15.00	152.00
	3 - Lucan Shopping Centre	41.00	29.00	0.00	107.00
	4 - R120 Newcastle Road (N)	34.00	153.00	101.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From					
		1 - Esker Road	0.00	6.00	36.00	47.00
		2 - R120 Newcastle Road (S)	12.00	1.00	8.00	133.00
		3 - Lucan Shopping Centre	27.00	35.00	0.00	80.00
	4 - R120 Newcastle Road (N)	58.00	159.00	101.00	0.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From					
		1 - Esker Road	0.00	1.00	47.00	50.00
		2 - R120 Newcastle Road (S)	12.00	1.00	11.00	154.00
		3 - Lucan Shopping Centre	23.00	19.00	0.00	89.00
	4 - R120 Newcastle Road (N)	54.00	183.00	112.00	4.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From					
		1 - Esker Road	0.00	5.00	38.00	60.00
		2 - R120 Newcastle Road (S)	10.00	1.00	15.00	158.00
		3 - Lucan Shopping Centre	37.00	36.00	0.00	86.00
	4 - R120 Newcastle Road (N)	55.00	171.00	83.00	1.00	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From					
		1 - Esker Road	0	28	0	5
		2 - R120 Newcastle Road (S)	0	100	0	14
		3 - Lucan Shopping Centre	0	0	0	1
	4 - R120 Newcastle Road (N)	0	18	1	0	

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From					
		1 - Esker Road	0	0	0	9
		2 - R120 Newcastle Road (S)	0	100	0	6
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	7	7	1	0	

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From					
		1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	16
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	14	0	0	

Heavy Vehicle Percentages

12:30 - 12:45

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	2
2 - R120 Newcastle Road (S)	0	100	0	11
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	10	11	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.65	15.91	1.7	G	86.25	352.98
2 - R120 Newcastle Road (S)	1.50	1043.36	176.4	F	172.25	689.02
3 - Lucan Shopping Centre	1.15	175.06	32.1	F	152.24	608.95
4 - R120 Newcastle Road (N)	1.22	432.81	149.0	F	317.63	1270.52

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	63.00	63.00	259.88	5.65	147.69	0.427	62.27	71.34	0.0	0.7	10.449	B
2 - R120 Newcastle Road (S)	175.00	175.00	150.66	5.65	139.51	1.254	136.02	171.49	0.0	39.0	145.160	F
3 - Lucan Shopping Centre	177.00	177.00	152.04	5.65	154.16	1.148	148.87	134.64	0.0	28.1	39.633	F
4 - R120 Newcastle Road (N)	288.00	288.00	65.09	5.65	278.31	1.435	266.13	235.82	0.0	21.9	48.672	E

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	89.00	89.00	268.27	6.74	153.69	0.579	88.40	87.68	0.7	1.3	13.658	B
2 - R120 Newcastle Road (S)	154.00	154.00	173.79	6.74	131.62	1.147	131.23	182.88	39.0	61.7	365.164	F
3 - Lucan Shopping Centre	142.00	142.00	169.71	6.74	147.81	0.960	142.13	135.31	28.1	28.0	175.361	F
4 - R120 Newcastle Road (N)	318.00	318.00	70.48	6.74	286.84	1.105	285.47	241.37	21.9	21.5	131.194	F

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	98.00	98.00	268.58	8.26	158.26	0.619	97.76	80.81	1.3	1.6	14.800	B
2 - R120 Newcastle Road (S)	178.00	178.00	191.34	8.26	122.49	1.505	122.29	175.00	61.7	117.2	667.683	F
3 - Lucan Shopping Centre	131.00	131.00	167.90	8.26	150.19	0.872	145.01	145.73	28.0	14.0	136.401	F
4 - R120 Newcastle Road (N)	353.00	353.00	59.41	8.26	290.08	1.222	289.99	253.50	54.5	117.6	477.163	F

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	103.00	103.00	264.43	8.26	159.08	0.648	102.80	87.13	1.6	1.8	15.905	C
2 - R120 Newcastle Road (S)	184.00	184.00	180.42	8.26	123.15	1.446	123.12	166.81	117.2	178.1	1089.361	F
3 - Lucan Shopping Centre	159.00	159.00	177.03	8.26	142.39	1.117	140.88	126.52	14.0	32.1	164.546	F
4 - R120 Newcastle Road (N)	310.00	310.00	71.65	8.26	280.03	1.112	279.91	246.25	117.6	147.8	432.826	F



Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: 20211202 C664_1 Lucan Arcady Lane Sim Friday PM v1.20.j9
 Path: C:\Users\Gabrielalhal\Desktop\Arcady lucan\V1.20
 Report generation date: 02/12/2021 12:11:17

- »2021 (Base Year) - Do Nothing, PM Friday
- »2022 (YoO) - Do Nothing, PM Friday
- »2022 (YoO) - Do Minimum, PM Friday
- »2037 (YoO+15) - Do Nothing, PM Friday
- »2037 (YoO+15) - Do Minimum, PM Friday

Summary of junction performance

	PM Friday		
	Queue (Veh)	Delay (s)	RFC
2021 (Base Year) - Do Nothing			
1 - Esker Road	0.8	8.53	0.44
2 - R120 Newcastle Road (S)	25.1	122.10	1.07
3 - Lucan Shopping Centre	4.9	37.39	0.86
4 - R120 Newcastle Road (N)	10.0	36.72	0.83
2022 (YoO) - Do Nothing			
1 - Esker Road	0.8	8.72	0.45
2 - R120 Newcastle Road (S)	32.4	150.90	1.29
3 - Lucan Shopping Centre	5.5	43.40	2.06
4 - R120 Newcastle Road (N)	12.0	45.11	0.95
2022 (YoO) - Do Minimum			
1 - Esker Road	0.9	9.21	0.47
2 - R120 Newcastle Road (S)	44.5	177.00	1.12
3 - Lucan Shopping Centre	7.0	55.40	2.06
4 - R120 Newcastle Road (N)	10.7	50.05	2.08
2037 (YoO+15) - Do Nothing			
1 - Esker Road	1.2	10.79	0.54
2 - R120 Newcastle Road (S)	156.3	940.94	1.29
3 - Lucan Shopping Centre	31.4	201.66	1.07
4 - R120 Newcastle Road (N)	127.1	380.17	1.16
2037 (YoO+15) - Do Minimum			
1 - Esker Road	1.2	11.08	0.56
2 - R120 Newcastle Road (S)	201.5	1022.81	1.42
3 - Lucan Shopping Centre	55.7	319.09	1.13
4 - R120 Newcastle Road (N)	148.6	447.01	1.18

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

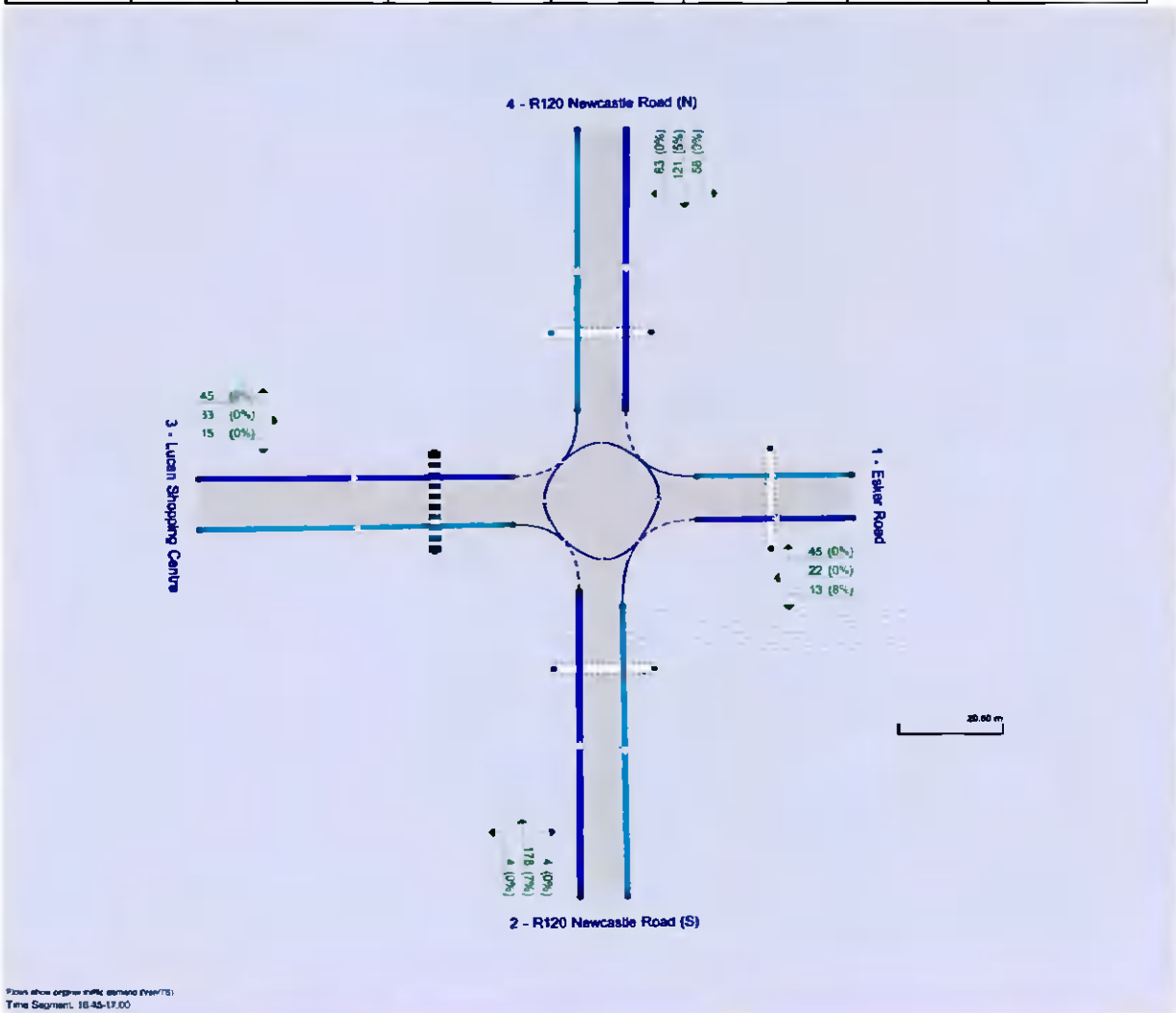
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D02	2021 (Base Year) - Do Nothing	PM Friday	DIRECT	16:45	17:45	60	15	✓
D04	2022 (YoO) - Do Nothing	PM Friday	DIRECT	16:45	17:45	60	15	✓
D06	2022 (YoO) - Do Minimum	PM Friday	DIRECT	16:45	17:45	60	15	✓
D08	2037 (YoO+15) - Do Nothing	PM Friday	DIRECT	16:45	17:45	60	15	✓
D10	2037 (YoO+15) - Do Minimum	PM Friday	DIRECT	16:45	17:45	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 (Base Year) - Do Nothing, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	59.80	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.00	4.9	35.7	32.0	7.0	
3 - Lucan Shopping Centre	2.90	5.00	2.6	16.3	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.00	0.7	33.7	32.0	12.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queuing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	5.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final Intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.586	300.618
3 - Lucan Shopping Centre	0.523	263.412
4 - R120 Newcastle Road (N)	0.646	381.419

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		-39.70
3 - Lucan Shopping Centre	Direct		-10.00
4 - R120 Newcastle Road (N)	Direct		-67.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D02	2021 (Base Year) - Do Nothing	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	13.00	22.00	45.00
		2 - R120 Newcastle Road (S)	4.00	0.00	4.00	178.00
		3 - Lucan Shopping Centre	33.00	15.00	1.00	45.00
		4 - R120 Newcastle Road (N)	58.00	121.00	63.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0.00	3.00	32.00	43.00
		2 - R120 Newcastle Road (S)	4.00	1.00	5.00	152.00
		3 - Lucan Shopping Centre	28.00	29.00	0.00	63.00
		4 - R120 Newcastle Road (N)	63.00	132.00	44.00	0.00

Demand (Veh/TS)

17:15 - 17:30

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	3.00	18.00	43.00
	2 - R120 Newcastle Road (S)	3.00	4.00	13.00	163.00
	3 - Lucan Shopping Centre	36.00	22.00	0.00	55.00
	4 - R120 Newcastle Road (N)	51.00	135.00	41.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	1.00	24.00	58.00
	2 - R120 Newcastle Road (S)	5.00	0.00	17.00	154.00
	3 - Lucan Shopping Centre	38.00	17.00	0.00	63.00
	4 - R120 Newcastle Road (N)	46.00	136.00	67.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	8	0	0
	2 - R120 Newcastle Road (S)	0	0	0	7
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	2
	2 - R120 Newcastle Road (S)	0	100	0	4
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	7	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	2
	2 - R120 Newcastle Road (S)	0	25	0	6
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	2	10	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	0
	2 - R120 Newcastle Road (S)	0	0	0	5
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.44	8.53	0.8	A	76.25	305.00
2 - R120 Newcastle Road (S)	1.07	122.16	25.1	F	176.69	706.78
3 - Lucan Shopping Centre	0.88	37.89	4.9	E	111.25	445.00
4 - R120 Newcastle Road (N)	0.93	38.76	10.0	E	239.24	956.95

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	80.00	80.00	195.00	5.65	200.49	0.399	79.35	92.41	0.0	0.7	7.389	A
2 - R120 Newcastle Road (S)	186.00	186.00	128.83	5.65	173.84	1.070	165.68	145.51	0.0	20.3	69.887	F
3 - Lucan Shopping Centre	94.00	94.00	206.75	5.65	139.45	0.674	92.06	87.76	0.0	1.9	18.320	E
4 - R120 Newcastle Road (N)	242.00	242.00	51.55	5.65	274.28	0.882	235.86	247.26	0.0	6.1	20.917	E

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	78.00	78.00	204.16	6.74	194.27	0.402	78.00	94.17	0.7	0.7	7.739	A
2 - R120 Newcastle Road (S)	162.00	162.00	119.11	6.74	182.27	0.887	171.73	163.05	20.3	10.6	82.179	F
3 - Lucan Shopping Centre	120.00	120.00	209.63	6.74	139.16	0.862	117.07	81.22	1.9	4.9	36.513	E
4 - R120 Newcastle Road (N)	239.00	239.00	60.87	6.74	264.43	0.904	237.46	265.83	6.1	7.7	30.778	E

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	84.00	84.00	201.61	8.26	190.96	0.335	84.16	89.93	0.7	0.5	7.105	A
2 - R120 Newcastle Road (S)	183.00	183.00	102.18	8.26	189.48	0.966	179.96	163.59	10.6	13.6	76.171	F
3 - Lucan Shopping Centre	113.00	113.00	210.62	8.26	137.27	0.823	113.03	71.52	4.9	4.8	27.537	E
4 - R120 Newcastle Road (N)	227.00	227.00	64.55	8.26	255.90	0.888	226.99	259.10	7.7	7.7	30.914	E

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	83.00	83.00	218.34	8.26	187.95	0.442	82.73	88.34	0.5	0.8	8.531	A
2 - R120 Newcastle Road (S)	176.00	176.00	147.39	8.26	167.16	1.052	164.30	153.68	13.6	25.3	122.159	F
3 - Lucan Shopping Centre	118.00	118.00	206.59	8.26	141.51	0.834	117.98	105.10	4.8	4.9	37.888	E
4 - R120 Newcastle Road (N)	249.00	249.00	60.08	8.26	266.64	0.933	246.60	264.48	7.7	10.1	38.757	E

2022 (YoO) - Do Nothing, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	73.49	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D04	2022 (YoO) - Do Nothing	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

16:45 -
17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	13.00	22.00	46.00
	2 - R120 Newcastle Road (S)	4.00	0.00	4.00	181.00
	3 - Lucan Shopping Centre	34.00	15.00	1.00	46.00
	4 - R120 Newcastle Road (N)	59.00	123.00	64.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0.00	3.00	33.00	44.00
		2 - R120 Newcastle Road (S)	4.00	1.00	5.00	155.00
		3 - Lucan Shopping Centre	28.00	29.00	0.00	64.00
		4 - R120 Newcastle Road (N)	64.00	134.00	45.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0.00	3.00	18.00	44.00
		2 - R120 Newcastle Road (S)	3.00	4.00	13.00	166.00
		3 - Lucan Shopping Centre	37.00	22.00	0.00	56.00
		4 - R120 Newcastle Road (N)	52.00	137.00	42.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From	1 - Esker Road	0.00	1.00	24.00	59.00
		2 - R120 Newcastle Road (S)	5.00	0.00	17.00	157.00
		3 - Lucan Shopping Centre	39.00	17.00	0.00	64.00
		4 - R120 Newcastle Road (N)	47.00	138.00	68.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	8	0	0
		2 - R120 Newcastle Road (S)	0	0	0	7
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	100	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	7	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	25	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	2	10	0	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	0
	2 - R120 Newcastle Road (S)	0	0	0	5
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.45	8.72	0.8	A	77.50	310.00
2 - R120 Newcastle Road (S)	1.09	158.66	32.5	F	179.67	718.69
3 - Lucan Shopping Centre	0.88	43.45	5.5	E	113.00	452.00
4 - R120 Newcastle Road (N)	0.95	45.11	12.0	E	243.24	972.94

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	81.00	81.00	197.40	5.65	199.17	0.407	80.32	94.11	0.0	0.7	7.531	A
2 - R120 Newcastle Road (S)	189.00	189.00	130.61	5.65	172.85	1.093	165.73	147.11	0.0	23.3	171.156	F
3 - Lucan Shopping Centre	96.00	96.00	207.84	5.65	138.88	0.691	93.91	88.51	0.0	2.1	19.227	E
4 - R120 Newcastle Road (N)	246.00	246.00	52.42	5.65	273.73	0.899	239.10	249.33	0.0	6.9	22.745	E

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	80.00	80.00	206.84	6.74	192.90	0.415	79.98	94.98	0.7	0.7	7.968	A
2 - R120 Newcastle Road (S)	165.00	165.00	122.09	6.74	180.55	0.912	173.57	164.74	23.3	14.8	163.596	F
3 - Lucan Shopping Centre	121.00	121.00	212.52	6.74	137.57	0.883	117.71	83.14	2.1	5.4	19.863	E
4 - R120 Newcastle Road (N)	243.00	243.00	60.67	6.74	264.60	0.914	241.16	269.57	6.9	8.8	34.501	E

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	65.00	65.00	204.42	8.26	189.49	0.343	65.17	91.87	0.7	0.5	7.248	A
2 - R120 Newcastle Road (S)	186.00	186.00	104.18	8.26	188.39	0.988	182.13	165.41	14.8	18.5	93.472	F
3 - Lucan Shopping Centre	115.00	115.00	214.00	8.26	135.43	0.849	114.97	72.31	5.4	5.4	11.398	E
4 - R120 Newcastle Road (N)	231.00	231.00	65.39	8.26	255.43	0.905	230.89	263.58	8.8	8.9	35.712	E

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	84.00	84.00	220.80	8.26	186.67	0.450	83.72	90.09	0.5	0.8	8.719	A
2 - R120 Newcastle Road (S)	179.00	179.00	149.08	8.26	166.14	1.076	164.51	155.45	18.5	33.1	156.063	F
3 - Lucan Shopping Centre	120.00	120.00	206.15	8.26	140.65	0.853	119.93	105.44	5.4	5.5	42.574	E
4 - R120 Newcastle Road (N)	253.00	253.00	61.08	8.26	266.00	0.950	249.82	267.00	8.9	12.1	45.107	E

2022 (YoO) - Do Minimum, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	100.00	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D06	2022 (YoO) - Do Minimum	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

16:45 -
17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	13.00	24.00	46.00
	2 - R120 Newcastle Road (S)	4.00	0.00	5.00	181.00
	3 - Lucan Shopping Centre	37.00	17.00	1.00	51.00
	4 - R120 Newcastle Road (N)	59.00	123.00	69.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0.00	3.00	35.00	44.00
		2 - R120 Newcastle Road (S)	4.00	1.00	6.00	155.00
		3 - Lucan Shopping Centre	32.00	31.00	0.00	69.00
		4 - R120 Newcastle Road (N)	64.00	134.00	49.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0.00	3.00	20.00	44.00
		2 - R120 Newcastle Road (S)	3.00	4.00	14.00	166.00
		3 - Lucan Shopping Centre	40.00	24.00	0.00	61.00
		4 - R120 Newcastle Road (N)	52.00	137.00	46.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From	1 - Esker Road	0.00	1.00	27.00	59.00
		2 - R120 Newcastle Road (S)	5.00	0.00	18.00	157.00
		3 - Lucan Shopping Centre	42.00	19.00	0.00	69.00
		4 - R120 Newcastle Road (N)	47.00	138.00	73.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	8	0	0
		2 - R120 Newcastle Road (S)	0	0	0	7
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	100	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	7	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	25	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	2	10	0	0

Heavy Vehicle Percentages

 17:30 -
17:45

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	0
2 - R120 Newcastle Road (S)	0	0	0	5
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.47	9.21	0.9	A	79.75	319.00
2 - R120 Newcastle Road (S)	1.12	214.09	44.8	F	180.64	722.55
3 - Lucan Shopping Centre	0.91	84.05	9.1	F	123.25	493.00
4 - R120 Newcastle Road (N)	0.95	39.95	16.7	F	247.73	990.91

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	83.00	83.00	203.02	5.65	196.22	0.423	82.28	96.47	0.0	0.7	7.851	A
2 - R120 Newcastle Road (S)	190.00	190.00	137.03	5.65	169.39	1.122	163.28	148.27	0.0	26.7	104.46	F
3 - Lucan Shopping Centre	106.00	106.00	204.58	5.65	140.70	0.753	103.24	95.72	0.0	2.8	22.630	F
4 - R120 Newcastle Road (N)	251.00	251.00	57.01	5.65	270.98	0.926	242.49	250.82	0.0	8.5	26.516	F

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	82.00	82.00	211.69	6.74	190.58	0.430	81.98	98.09	0.7	0.7	8.283	A
2 - R120 Newcastle Road (S)	166.00	166.00	128.04	6.74	177.18	0.934	171.49	165.64	26.7	21.3	129.684	F
3 - Lucan Shopping Centre	132.00	132.00	209.56	6.74	139.15	0.940	126.37	89.98	2.8	8.4	58.031	F
4 - R120 Newcastle Road (N)	247.00	247.00	65.43	6.74	261.85	0.944	244.36	270.51	8.5	11.2	42.374	E

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	67.00	67.00	210.00	8.26	186.81	0.359	67.18	94.60	0.7	0.6	7.536	A
2 - R120 Newcastle Road (S)	187.00	187.00	110.15	8.26	185.19	1.010	181.60	167.03	21.3	26.5	131.166	F
3 - Lucan Shopping Centre	125.00	125.00	212.84	8.26	136.11	0.918	124.44	78.90	8.4	8.9	68.654	F
4 - R120 Newcastle Road (N)	235.00	235.00	69.91	8.26	252.97	0.930	234.69	267.37	11.2	11.5	46.251	E

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	87.00	87.00	226.25	8.26	184.04	0.473	86.69	92.56	0.6	0.9	9.214	A
2 - R120 Newcastle Road (S)	180.00	180.00	156.16	8.26	162.12	1.106	161.39	156.78	26.5	45.2	214.086	F
3 - Lucan Shopping Centre	130.00	130.00	204.71	8.26	142.49	0.912	129.80	112.84	8.9	9.1	66.247	F
4 - R120 Newcastle Road (N)	258.00	258.00	66.14	8.26	262.52	0.980	252.67	268.37	11.5	16.8	59.949	F

2037 (YoO+15) - Do Nothing, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	472.00	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D08	2037 (YoO+15) - Do Nothing	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

16:45 -
17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	16.00	26.00	54.00
	2 - R120 Newcastle Road (S)	5.00	0.00	5.00	216.00
	3 - Lucan Shopping Centre	40.00	18.00	1.00	54.00
	4 - R120 Newcastle Road (N)	69.00	146.00	75.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From					
		1 - Esker Road	0.00	4.00	38.00	52.00
		2 - R120 Newcastle Road (S)	5.00	1.00	6.00	183.00
		3 - Lucan Shopping Centre	34.00	35.00	0.00	75.00
	4 - R120 Newcastle Road (N)	75.00	160.00	53.00	0.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From					
		1 - Esker Road	0.00	4.00	22.00	52.00
		2 - R120 Newcastle Road (S)	4.00	5.00	16.00	197.00
		3 - Lucan Shopping Centre	43.00	26.00	0.00	66.00
	4 - R120 Newcastle Road (N)	61.00	165.00	49.00	0.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From					
		1 - Esker Road	0.00	1.00	29.00	69.00
		2 - R120 Newcastle Road (S)	6.00	0.00	20.00	186.00
		3 - Lucan Shopping Centre	46.00	20.00	0.00	75.00
	4 - R120 Newcastle Road (N)	55.00	165.00	80.00	0.00	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From					
		1 - Esker Road	0	9	0	0
		2 - R120 Newcastle Road (S)	0	0	0	8
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	6	0	0	

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From					
		1 - Esker Road	0	0	0	3
		2 - R120 Newcastle Road (S)	0	100	0	5
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	8	0	0	

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From					
		1 - Esker Road	0	0	0	3
		2 - R120 Newcastle Road (S)	0	28	0	7
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	2	11	0	0	

Heavy Vehicle Percentages

 17:30 -
17:45

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	0
2 - R120 Newcastle Road (S)	0	0	0	6
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	0	7	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.54	10.79	1.2	B	91.75	366.99
2 - R120 Newcastle Road (S)	1.39	94.934	162.38	F	213.10	852.42
3 - Lucan Shopping Centre	1.07	201.66	31.4	F	133.25	533.00
4 - R120 Newcastle Road (N)	1.16	389.17	127.1	F	288.04	1152.17

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	96.00	96.00	215.68	5.65	188.36	0.510	94.98	103.78	0.0	1.0	9.538	A
2 - R120 Newcastle Road (S)	226.00	226.00	147.09	5.65	162.38	1.392	159.96	163.58	0.0	66.0	102.862	F
3 - Lucan Shopping Centre	113.00	113.00	209.84	5.65	137.24	0.823	109.12	97.20	0.0	3.9	28.964	D
4 - R120 Newcastle Road (N)	290.00	290.00	60.51	5.65	267.28	1.085	258.94	258.45	0.0	31.1	85.116	F

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	94.00	94.00	224.06	6.74	183.64	0.512	93.99	101.87	1.0	1.0	10.033	B
2 - R120 Newcastle Road (S)	195.00	195.00	139.84	6.74	167.91	1.152	167.87	178.21	66.4	93.3	429.777	F
3 - Lucan Shopping Centre	144.00	144.00	215.28	6.74	134.64	1.079	129.76	92.43	3.9	18.1	95.822	F
4 - R120 Newcastle Road (N)	288.00	288.00	67.06	6.74	259.79	1.112	258.87	277.98	31.1	60.2	166.834	F

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	78.00	78.00	220.81	8.26	180.44	0.432	78.26	101.37	1.0	0.8	8.833	A
2 - R120 Newcastle Road (S)	222.00	222.00	119.34	8.26	178.99	1.248	178.54	179.74	93.3	130.4	215.070	F
3 - Lucan Shopping Centre	135.00	135.00	221.55	8.26	130.89	1.031	128.60	76.32	18.1	24.5	162.766	F
4 - R120 Newcastle Road (N)	275.00	275.00	71.16	8.26	251.46	1.100	251.03	278.99	60.2	84.2	266.311	F

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	99.00	99.00	229.41	8.26	181.64	0.545	98.60	96.86	0.8	1.2	10.786	B
2 - R120 Newcastle Road (S)	212.00	212.00	158.42	8.26	157.78	1.327	157.78	169.60	136.4	190.7	940.935	F
3 - Lucan Shopping Centre	141.00	141.00	214.64	8.26	135.70	1.339	134.12	101.56	24.5	31.4	201.658	F
4 - R120 Newcastle Road (N)	300.00	300.00	70.06	8.26	256.25	1.159	256.21	278.70	84.2	128.1	380.167	F

2037 (YoO+15) - Do Minimum, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	54.10	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2037 (YoO+15) - Do Minimum	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

16:45 -
17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	16.00	28.00	54.00
	2 - R120 Newcastle Road (S)	5.00	0.00	6.00	216.00
	3 - Lucan Shopping Centre	43.00	20.00	1.00	59.00
	4 - R120 Newcastle Road (N)	69.00	146.00	80.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0.00	4.00	40.00	52.00
		2 - R120 Newcastle Road (S)	5.00	1.00	7.00	183.00
		3 - Lucan Shopping Centre	37.00	37.00	0.00	81.00
		4 - R120 Newcastle Road (N)	75.00	160.00	57.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0.00	4.00	24.00	52.00
		2 - R120 Newcastle Road (S)	4.00	5.00	16.00	197.00
		3 - Lucan Shopping Centre	46.00	28.00	0.00	71.00
		4 - R120 Newcastle Road (N)	61.00	165.00	54.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From	1 - Esker Road	0.00	1.00	31.00	69.00
		2 - R120 Newcastle Road (S)	6.00	0.00	21.00	186.00
		3 - Lucan Shopping Centre	49.00	22.00	0.00	81.00
		4 - R120 Newcastle Road (N)	55.00	165.00	85.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	9	0	0
		2 - R120 Newcastle Road (S)	0	0	0	8
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	6	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0	0	0	3
		2 - R120 Newcastle Road (S)	0	100	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	8	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0	0	0	3
		2 - R120 Newcastle Road (S)	0	28	0	7
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	2	11	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	0
	2 - R120 Newcastle Road (S)	0	0	0	6
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	7	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.56	11.08	1.2	B	93.75	375.00
2 - R120 Newcastle Road (S)	1.42	1022.81	201.5	F	213.79	855.16
3 - Lucan Shopping Centre	1.13	339.03	55.7	F	143.75	575.00
4 - R120 Newcastle Road (N)	1.14	447.01	148.6	F	292.75	1171.01

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	98.00	98.00	217.63	5.65	187.55	0.523	96.93	104.87	0.0	1.1	9.821	A
2 - R120 Newcastle Road (S)	227.00	227.00	152.00	5.65	159.76	1.421	157.49	162.57	0.0	39.5	205.381	F
3 - Lucan Shopping Centre	123.00	123.00	206.74	5.65	138.99	0.885	117.53	102.75	0.0	5.5	35.890	E
4 - R120 Newcastle Road (N)	295.00	295.00	64.62	5.65	264.84	1.114	257.89	259.64	0.0	37.1	75.214	F

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	96.00	96.00	225.10	6.74	183.61	0.523	96.00	102.04	1.1	1.1	10.268	B
2 - R120 Newcastle Road (S)	196.00	196.00	145.16	6.74	164.92	1.176	164.92	175.94	69.5	106.7	465.468	F
3 - Lucan Shopping Centre	155.00	155.00	211.68	6.74	136.59	1.135	133.88	98.40	5.5	26.6	127.257	F
4 - R120 Newcastle Road (N)	292.00	292.00	68.73	6.74	259.02	1.130	258.41	276.83	37.1	70.7	198.613	F

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	80.00	80.00	222.22	8.26	180.35	0.444	80.27	101.04	1.1	0.8	9.017	A
2 - R120 Newcastle Road (S)	222.00	222.00	124.86	8.26	176.13	1.269	175.71	177.63	100.7	146.0	673.914	F
3 - Lucan Shopping Centre	145.00	145.00	218.74	8.26	132.55	1.094	131.71	81.83	26.6	39.9	241.038	F
4 - R120 Newcastle Road (N)	280.00	280.00	72.17	8.26	251.38	1.121	251.10	278.29	70.7	99.6	312.243	F

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	101.00	101.00	230.23	8.26	181.38	0.557	100.59	96.33	0.8	1.2	11.080	B
2 - R120 Newcastle Road (S)	213.00	213.00	162.04	8.26	155.57	1.350	155.57	168.78	146.6	204.1	1022.815	F
3 - Lucan Shopping Centre	152.00	152.00	212.81	8.26	136.60	1.113	136.18	104.79	39.9	55.7	329.087	F
4 - R120 Newcastle Road (N)	305.00	305.00	71.57	8.26	254.98	1.183	254.98	277.42	99.6	149.8	447.015	F



Junctions 9
ARCADY 9 - Roundabout Module
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Filename: 20211117 C664_1 Lucan Arcady Lane Sim Saturday AM v1.20.j9
 Path: C:\Users\Gabrielalha\Desktop\Arcady lucan\V1.20
 Report generation date: 02/12/2021 12:03:03

- »2021 (Base Year) - Do Nothing, AM Saturday
- »2022 (YoO) - Do Nothing, AM Saturday
- »2022 (YoO) - Do Minimum, AM Saturday
- »2037 (YoO+15) - Do Nothing, AM Saturday
- »2037 (YoO+15) - Do Minimum, AM Saturday

Summary of junction performance

AM Saturday			
	Queue (Veh)	Delay (s)	RFC
2021 (Base Year) - Do Nothing			
1 - Esker Road	1.5	14.20	0.61
2 - R120 Newcastle Road (S)	10.3	46.96	0.95
3 - Lucan Shopping Centre	5.0	35.34	0.87
4 - R120 Newcastle Road (N)	10.0	32.16	0.93
2022 (YoO) - Do Nothing			
1 - Esker Road	1.6	15.17	0.62
2 - R120 Newcastle Road (S)	12.4	58.94	1.01
3 - Lucan Shopping Centre	5.8	44.13	0.89
4 - R120 Newcastle Road (N)	12.2	38.14	0.95
2022 (YoO) - Do Minimum			
1 - Esker Road	1.9	17.42	0.67
2 - R120 Newcastle Road (S)	17.2	91.93	1.00
3 - Lucan Shopping Centre	10.9	76.95	0.98
4 - R120 Newcastle Road (N)	19.6	59.99	0.98
2037 (YoO+15) - Do Nothing			
1 - Esker Road	3.5	27.09	0.80
2 - R120 Newcastle Road (S)	117.3	189.82	1.23
3 - Lucan Shopping Centre	33.7	247.11	1.10
4 - R120 Newcastle Road (N)	136.5	307.66	1.14
2037 (YoO+15) - Do Minimum			
1 - Esker Road	3.4	26.84	0.80
2 - R120 Newcastle Road (S)	146.4	619.15	1.27
3 - Lucan Shopping Centre	63.5	434.29	1.17
4 - R120 Newcastle Road (N)	184.4	454.83	1.18

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

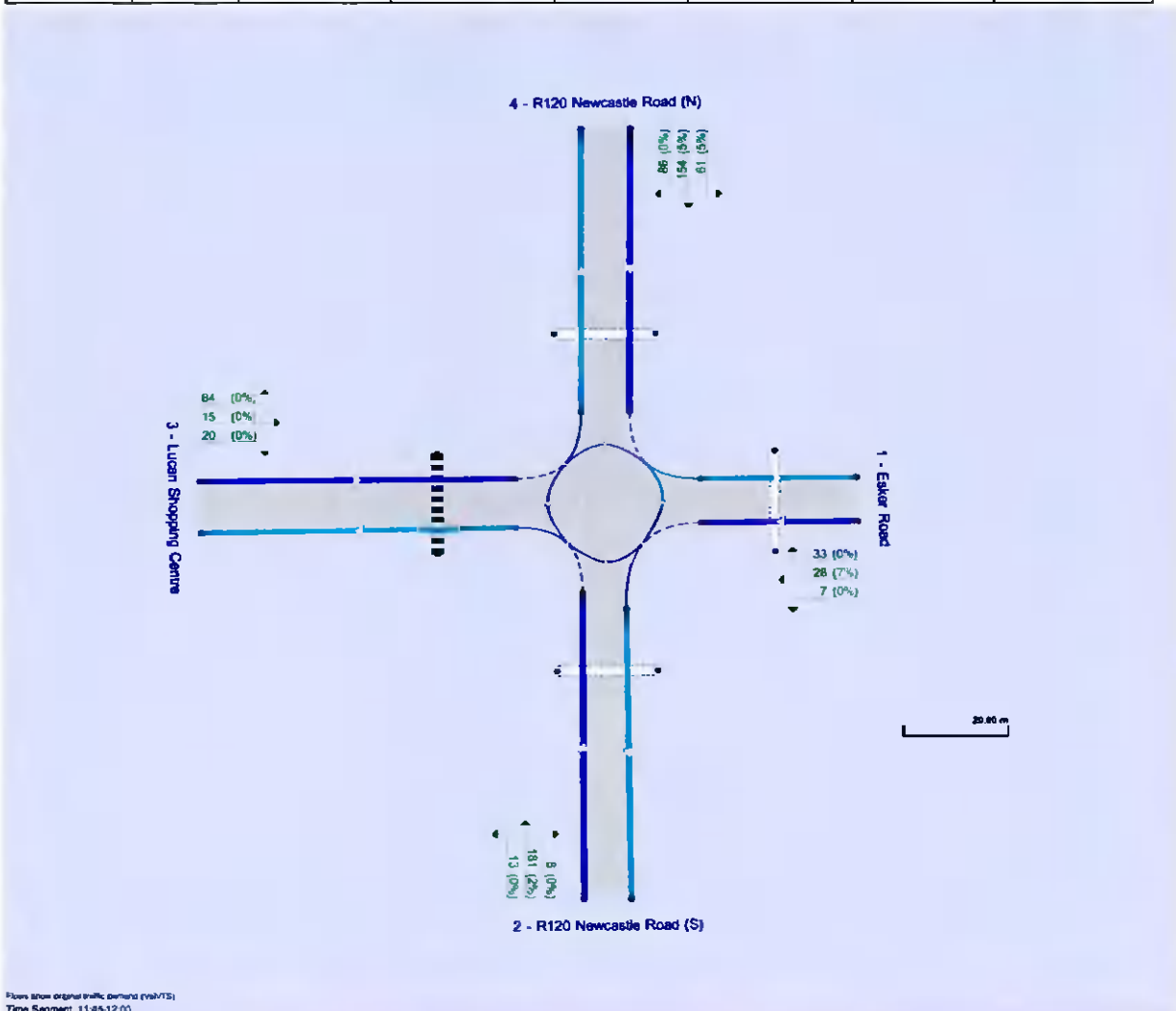
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

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



The junction diagram reflects the last run of Junctions

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D01	2021 (Base Year) - Do Nothing	AM Saturday	DIRECT	11:45	12:45	60	15	✓
D03	2022 (YoO) - Do Nothing	AM Saturday	DIRECT	11:45	12:45	60	15	✓
D05	2022 (YoO) - Do Minimum	AM Saturday	DIRECT	11:45	12:45	60	15	✓
D07	2037 (YoO+15) - Do Nothing	AM Saturday	DIRECT	11:45	12:45	60	15	✓
D09	2037 (YoO+15) - Do Minimum	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 (Base Year) - Do Nothing, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	35.46	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I* - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.00	4.9	35.7	32.0	7.0	
3 - Lucan Shopping Centre	2.90	5.00	2.6	16.3	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.00	0.7	33.7	32.0	12.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	5.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.586	300.618
3 - Lucan Shopping Centre	0.523	263.412
4 - R120 Newcastle Road (N)	0.646	381.419

The slope and intercept shown above include any corrections and adjustments

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		28.00
3 - Lucan Shopping Centre	Direct		2.20
4 - R120 Newcastle Road (N)	Direct		-12.50

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D01	2021 (Base Year) - Do Nothing	AM Saturday	DIRECT	11.45	12.45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	7.00	28.00	33.00
	2 - R120 Newcastle Road (S)	8.00	4.00	13.00	181.00
	3 - Lucan Shopping Centre	15.00	20.00	0.00	84.00
	4 - R120 Newcastle Road (N)	61.00	154.00	86.00	0.00

Demand (Veh/TS)

12:00 - 12:15

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	5.00	28.00	48.00
	2 - R120 Newcastle Road (S)	9.00	4.00	5.00	162.00
	3 - Lucan Shopping Centre	23.00	13.00	0.00	66.00
	4 - R120 Newcastle Road (N)	41.00	144.00	88.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	4.00	31.00	48.00
		2 - R120 Newcastle Road (S)	8.00	4.00	18.00	180.00
		3 - Lucan Shopping Centre	38.00	18.00	0.00	63.00
		4 - R120 Newcastle Road (N)	58.00	147.00	88.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	3.00	36.00	59.00
		2 - R120 Newcastle Road (S)	10.00	0.00	3.00	177.00
		3 - Lucan Shopping Centre	25.00	21.00	0.00	59.00
		4 - R120 Newcastle Road (N)	43.00	158.00	96.00	3.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	0	7	0
		2 - R120 Newcastle Road (S)	0	50	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	5	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	40	0	0
		2 - R120 Newcastle Road (S)	22	50	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	9	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	50	0	0
		2 - R120 Newcastle Road (S)	0	50	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	3
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.61	14.20	1.5	B	82.49	329.97
2 - R120 Newcastle Road (S)	0.95	46.89	10.3	E	196.49	785.98
3 - Lucan Shopping Centre	0.87	39.26	5.0	E	111.25	445.00
4 - R120 Newcastle Road (N)	0.93	32.16	10.0	D	292.50	1170.00

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	68.00	68.00	256.45	5.65	161.59	0.421	67.29	81.59	0.0	0.7	9.475	A
2 - R120 Newcastle Road (S)	206.00	206.00	143.91	5.65	236.74	0.476	200.47	179.83	0.0	5.5	22.251	C
3 - Lucan Shopping Centre	119.00	119.00	220.47	5.65	147.42	0.807	115.40	123.91	0.0	3.6	25.609	D
4 - R120 Newcastle Road (N)	301.00	301.00	45.62	5.65	326.55	0.922	292.43	290.25	0.0	8.6	22.547	C

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	81.00	81.00	253.12	6.74	163.12	0.497	80.74	73.51	0.7	1.0	10.890	B
2 - R120 Newcastle Road (S)	180.00	180.00	166.88	6.74	216.62	0.632	180.27	166.99	5.5	5.3	25.211	D
3 - Lucan Shopping Centre	102.00	102.00	225.77	6.74	141.30	0.722	102.82	121.39	3.6	2.8	23.935	C
4 - R120 Newcastle Road (N)	276.00	276.00	49.03	6.74	319.86	0.863	277.60	279.56	8.6	7.0	22.214	C

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	83.00	83.00	255.61	8.26	167.46	0.496	82.99	102.25	1.0	1.0	10.651	B
2 - R120 Newcastle Road (S)	210.00	210.00	166.72	8.26	221.17	0.519	205.00	171.89	5.3	10.3	44.188	E
3 - Lucan Shopping Centre	119.00	119.00	235.82	8.26	137.50	0.665	116.76	135.90	2.8	5.0	39.261	D
4 - R120 Newcastle Road (N)	293.00	293.00	66.43	8.26	321.23	0.911	291.44	286.16	7.0	8.6	27.949	D

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	98.00	98.00	276.48	8.26	160.26	0.611	97.46	78.72	1.0	1.5	14.203	B
2 - R120 Newcastle Road (S)	190.00	190.00	192.71	8.26	209.81	0.905	190.16	181.23	10.3	10.2	46.951	E
3 - Lucan Shopping Centre	105.00	105.00	247.99	8.26	133.06	0.789	105.86	134.88	5.0	4.2	34.372	D
4 - R120 Newcastle Road (N)	300.00	300.00	56.68	8.26	323.95	0.927	298.52	297.17	8.6	10.0	32.155	D

2022 (YoO) - Do Nothing, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	12.45	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D03	2022 (YoO) - Do Nothing	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	7.00	28.00	34.00
	2 - R120 Newcastle Road (S)	8.00	4.00	13.00	164.00
	3 - Lucan Shopping Centre	15.00	20.00	0.00	85.00
	4 - R120 Newcastle Road (N)	62.00	157.00	87.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	5.00	28.00	49.00
		2 - R120 Newcastle Road (S)	9.00	4.00	5.00	165.00
		3 - Lucan Shopping Centre	23.00	13.00	0.00	67.00
		4 - R120 Newcastle Road (N)	42.00	147.00	89.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	4.00	32.00	49.00
		2 - R120 Newcastle Road (S)	8.00	4.00	18.00	183.00
		3 - Lucan Shopping Centre	39.00	18.00	0.00	64.00
		4 - R120 Newcastle Road (N)	59.00	149.00	89.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	3.00	37.00	60.00
		2 - R120 Newcastle Road (S)	10.00	0.00	3.00	180.00
		3 - Lucan Shopping Centre	25.00	21.00	0.00	60.00
		4 - R120 Newcastle Road (N)	44.00	161.00	98.00	3.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	0	7	0
		2 - R120 Newcastle Road (S)	0	50	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	5	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	40	0	0
		2 - R120 Newcastle Road (S)	22	50	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	9	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	50	0	0
		2 - R120 Newcastle Road (S)	0	50	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

 12:30 -
12:45

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	0
2 - R120 Newcastle Road (S)	0	0	0	3
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	0	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.63	15.17	1.6	D	83.99	335.97
2 - R120 Newcastle Road (S)	0.97	56.95	12.4	F	199.49	797.96
3 - Lucan Shopping Centre	0.69	11.43	5.8	E	112.50	450.00
4 - R120 Newcastle Road (N)	0.95	38.15	12.2	E	297.50	1190.00

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	69.00	69.00	259.45	5.65	160.01	0.431	68.26	82.30	0.0	0.7	9.734	A
2 - R120 Newcastle Road (S)	209.00	209.00	145.56	5.65	235.83	0.886	202.85	182.15	0.0	6.2	24.044	D
3 - Lucan Shopping Centre	120.00	120.00	223.86	5.65	145.62	0.824	116.07	124.54	0.0	3.9	27.638	D
4 - R120 Newcastle Road (N)	306.00	306.00	45.50	5.65	326.61	0.937	296.24	294.44	0.0	9.8	24.657	C

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	82.00	82.00	257.09	6.74	161.08	0.509	81.73	74.54	0.7	1.0	11.302	B
2 - R120 Newcastle Road (S)	183.00	183.00	168.82	6.74	215.63	0.850	183.18	170.00	6.2	6.0	28.246	D
3 - Lucan Shopping Centre	103.00	103.00	229.64	6.74	139.21	0.740	103.85	122.37	3.9	3.1	26.132	D
4 - R120 Newcastle Road (N)	281.00	281.00	49.01	6.74	319.86	0.879	282.62	284.48	9.8	8.2	25.417	D

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	258.45	8.26	166.35	0.511	84.98	103.92	1.0	1.0	11.055	B
2 - R120 Newcastle Road (S)	213.00	213.00	169.68	8.26	219.50	0.970	206.65	173.75	6.0	12.3	51.353	F
3 - Lucan Shopping Centre	121.00	121.00	238.63	8.26	135.99	0.890	118.26	137.70	3.1	5.8	44.426	E
4 - R120 Newcastle Road (N)	297.00	297.00	67.08	8.26	320.78	0.825	295.29	289.81	8.2	9.9	31.912	D

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	100.00	100.00	280.73	8.26	158.05	0.633	99.39	79.76	1.0	1.7	15.172	C
2 - R120 Newcastle Road (S)	193.00	193.00	196.31	8.26	207.73	0.929	193.05	183.60	12.3	12.4	58.949	F
3 - Lucan Shopping Centre	106.00	106.00	251.68	8.26	131.07	0.809	107.03	137.68	5.8	4.8	39.302	E
4 - R120 Newcastle Road (N)	306.00	306.00	56.82	8.26	323.89	0.945	303.69	301.89	9.9	12.2	38.149	E

2022 (YoO) - Do Minimum, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	64.23	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D05	2022 (YoO) - Do Minimum	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	7.00	31.00	34.00
	2 - R120 Newcastle Road (S)	8.00	4.00	14.00	184.00
	3 - Lucan Shopping Centre	18.00	22.00	0.00	93.00
	4 - R120 Newcastle Road (N)	62.00	157.00	96.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From					
		1 - Esker Road	0.00	5.00	31.00	49.00
		2 - R120 Newcastle Road (S)	9.00	4.00	6.00	165.00
		3 - Lucan Shopping Centre	26.00	15.00	0.00	75.00
	4 - R120 Newcastle Road (N)	42.00	147.00	98.00	3.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From					
		1 - Esker Road	0.00	4.00	34.00	49.00
		2 - R120 Newcastle Road (S)	8.00	4.00	19.00	183.00
		3 - Lucan Shopping Centre	42.00	20.00	0.00	72.00
	4 - R120 Newcastle Road (N)	59.00	149.00	98.00	0.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From					
		1 - Esker Road	0.00	3.00	40.00	60.00
		2 - R120 Newcastle Road (S)	10.00	0.00	4.00	160.00
		3 - Lucan Shopping Centre	28.00	23.00	0.00	68.00
	4 - R120 Newcastle Road (N)	44.00	161.00	106.00	4.00	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From					
		1 - Esker Road	0	0	7	0
		2 - R120 Newcastle Road (S)	0	50	0	2
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	5	5	0	0	

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From					
		1 - Esker Road	0	40	0	0
		2 - R120 Newcastle Road (S)	22	50	0	5
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	9	0	0	

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From					
		1 - Esker Road	0	50	0	0
		2 - R120 Newcastle Road (S)	0	50	0	4
		3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	2	0	0	

Heavy Vehicle Percentages

 12:30 -
12:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	0
	2 - R120 Newcastle Road (S)	0	0	0	3
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.67	17.42	1.9	D	86.74	346.97
2 - R120 Newcastle Road (S)	1.05	34.83	17.2	F	200.48	801.94
3 - Lucan Shopping Centre	0.98	18.95	10.9	F	125.50	502.00
4 - R120 Newcastle Road (N)	0.98	38.05	19.1	F	306.50	1225.99

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	72.00	72.00	267.10	5.65	155.82	0.462	71.16	84.23	0.0	0.8	10.531	B
2 - R120 Newcastle Road (S)	210.00	210.00	156.18	5.65	229.67	0.914	202.54	182.08	0.0	7.5	28.108	D
3 - Lucan Shopping Centre	133.00	133.00	222.64	5.65	146.28	0.909	126.58	136.08	0.0	6.4	38.061	E
4 - R120 Newcastle Road (N)	315.00	315.00	49.64	5.65	324.35	0.971	301.89	299.57	0.0	13.3	30.603	D

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	267.52	6.74	156.27	0.544	84.68	77.42	0.8	1.2	12.512	B
2 - R120 Newcastle Road (S)	184.00	184.00	180.46	6.74	209.35	0.860	184.02	171.74	7.5	7.4	35.851	E
3 - Lucan Shopping Centre	116.00	116.00	229.37	6.74	139.38	0.832	116.80	135.11	6.4	5.6	41.851	E
4 - R120 Newcastle Road (N)	290.00	290.00	53.86	6.74	317.37	0.914	291.08	292.31	13.3	12.3	30.625	E

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	87.00	87.00	268.27	8.26	162.05	0.537	87.00	105.47	1.2	1.2	11.993	B
2 - R120 Newcastle Road (S)	214.00	214.00	180.43	8.26	213.47	0.905	205.02	174.84	7.4	16.4	65.831	F
3 - Lucan Shopping Centre	134.00	134.00	236.38	8.26	137.21	0.977	128.68	149.07	5.6	10.9	73.408	F
4 - R120 Newcastle Road (N)	306.00	306.00	70.55	8.26	318.53	0.959	303.19	294.52	12.3	15.1	46.886	E

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	103.00	103.00	289.28	8.26	153.04	0.673	102.22	82.77	1.2	1.9	17.425	G
2 - R120 Newcastle Road (S)	194.00	194.00	207.19	8.26	201.52	0.962	193.16	184.31	16.4	17.4	84.834	F
3 - Lucan Shopping Centre	119.00	119.00	251.33	8.26	131.26	0.907	119.16	149.02	10.9	10.8	78.954	F
4 - R120 Newcastle Road (N)	315.00	315.00	61.60	8.26	321.18	0.982	310.45	308.88	15.1	19.6	58.084	F

2037 (YoO+15) - Do Nothing, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	226.05	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D07	2037 (YoO+15) - Do Nothing	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	8.00	34.00	40.00
	2 - R120 Newcastle Road (S)	10.00	5.00	16.00	217.00
	3 - Lucan Shopping Centre	18.00	24.00	0.00	101.00
	4 - R120 Newcastle Road (N)	74.00	186.00	103.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	6.00	33.00	57.00
		2 - R120 Newcastle Road (S)	11.00	5.00	6.00	196.00
		3 - Lucan Shopping Centre	28.00	16.00	0.00	79.00
		4 - R120 Newcastle Road (N)	49.00	175.00	105.00	4.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	5.00	37.00	57.00
		2 - R120 Newcastle Road (S)	10.00	5.00	22.00	217.00
		3 - Lucan Shopping Centre	46.00	22.00	0.00	75.00
		4 - R120 Newcastle Road (N)	69.00	177.00	105.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	43.00	71.00
		2 - R120 Newcastle Road (S)	12.00	0.00	4.00	213.00
		3 - Lucan Shopping Centre	30.00	25.00	0.00	71.00
		4 - R120 Newcastle Road (N)	51.00	191.00	115.00	4.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	0	8	0
		2 - R120 Newcastle Road (S)	0	54	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	54	0	0
		2 - R120 Newcastle Road (S)	0	54	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

12:30 - 12:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	3
	2 - R120 Newcastle Road (S)	0	0	0	0
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.80	27.09	3.5	G	98.75	395.01
2 - R120 Newcastle Road (S)	1.23	489.82	117.3	F	236.24	944.95
3 - Lucan Shopping Centre	1.10	347.11	33.7	F	133.75	535.00
4 - R120 Newcastle Road (N)	1.14	327.66	136.8	F	352.36	1409.43

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	82.00	82.00	277.20	5.65	150.10	0.546	80.83	89.18	0.0	1.2	12.792	B
2 - R120 Newcastle Road (S)	248.00	248.00	162.57	5.65	225.43	1.100	218.13	195.46	0.0	29.9	74.135	F
3 - Lucan Shopping Centre	143.00	143.00	243.48	5.65	135.00	1.059	127.04	137.22	0.0	16.0	74.362	F
4 - R120 Newcastle Road (N)	363.00	363.00	50.51	5.65	322.57	1.125	315.87	320.02	0.0	47.1	75.709	F

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	96.00	96.00	293.59	6.74	149.99	0.640	95.47	86.39	1.2	1.7	16.335	C
2 - R120 Newcastle Road (S)	218.00	218.00	193.05	6.74	207.44	1.063	205.90	196.01	29.9	42.0	168.837	F
3 - Lucan Shopping Centre	123.00	123.00	259.00	6.74	125.92	0.977	121.40	139.95	16.0	17.6	134.742	F
4 - R120 Newcastle Road (N)	333.00	333.00	57.15	6.74	324.61	1.022	322.83	323.25	47.1	57.4	154.066	F

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	99.00	99.00	281.15	8.26	154.82	0.640	98.96	107.84	1.7	1.7	16.084	C
2 - R120 Newcastle Road (S)	254.00	254.00	190.40	8.26	206.58	1.232	206.31	189.71	42.0	89.7	333.578	F
3 - Lucan Shopping Centre	143.00	143.00	248.62	8.26	130.06	1.100	128.77	148.08	17.6	31.8	190.823	F
4 - R120 Newcastle Road (N)	351.00	351.00	71.98	8.26	317.49	1.105	317.00	305.40	57.4	91.4	218.058	F

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	118.00	118.00	292.77	8.26	147.79	0.798	116.28	91.25	1.7	3.5	27.091	G
2 - R120 Newcastle Road (S)	229.00	229.00	214.07	8.26	197.35	1.134	197.34	194.97	89.7	121.4	489.820	F
3 - Lucan Shopping Centre	126.00	126.00	260.11	8.26	126.02	1.000	124.12	151.31	31.8	33.7	247.107	F
4 - R120 Newcastle Road (N)	361.00	361.00	66.76	8.26	317.41	1.144	317.26	317.47	91.4	135.2	327.662	F

2037 (YoO+15) - Do Minimum, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	447.40	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D09	2037 (YoO+15) - Do Minimum	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 -
12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	8.00	37.00	40.00
	2 - R120 Newcastle Road (S)	10.00	5.00	17.00	217.00
	3 - Lucan Shopping Centre	21.00	26.00	0.00	109.00
	4 - R120 Newcastle Road (N)	74.00	166.00	112.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	6.00	36.00	57.00
		2 - R120 Newcastle Road (S)	11.00	5.00	7.00	196.00
		3 - Lucan Shopping Centre	30.00	18.00	0.00	87.00
		4 - R120 Newcastle Road (N)	49.00	175.00	114.00	4.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	5.00	40.00	57.00
		2 - R120 Newcastle Road (S)	10.00	5.00	23.00	217.00
		3 - Lucan Shopping Centre	48.00	24.00	0.00	83.00
		4 - R120 Newcastle Road (N)	69.00	177.00	114.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	46.00	71.00
		2 - R120 Newcastle Road (S)	12.00	0.00	5.00	213.00
		3 - Lucan Shopping Centre	33.00	27.00	0.00	79.00
		4 - R120 Newcastle Road (N)	51.00	191.00	124.00	4.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	0	8	0
		2 - R120 Newcastle Road (S)	0	54	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	44	0	0
		2 - R120 Newcastle Road (S)	25	54	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	11	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	54	0	0
		2 - R120 Newcastle Road (S)	0	54	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

12:30 - 12:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	0
	2 - R120 Newcastle Road (S)	0	0	0	3
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.80	26.84	3.4	D	101.73	406.94
2 - R120 Newcastle Road (S)	1.27	619.15	146.4	F	237.59	950.35
3 - Lucan Shopping Centre	1.17	134.22	66.5	F	146.25	585.00
4 - R120 Newcastle Road (N)	1.18	454.83	184.4	F	360.94	1443.75

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	279.36	5.65	149.11	0.570	83.72	89.21	0.0	1.3	13.516	B
2 - R120 Newcastle Road (S)	249.00	249.00	170.96	5.65	220.53	1.129	214.35	192.12	0.0	34.7	85.110	F
3 - Lucan Shopping Centre	156.00	156.00	239.11	5.65	137.36	1.136	131.89	146.19	0.0	24.1	98.749	F
4 - R120 Newcastle Road (N)	372.00	372.00	52.65	5.65	321.55	1.157	315.92	318.35	0.0	56.1	88.097	F

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	99.00	99.00	286.22	6.74	144.77	0.684	98.24	83.58	1.3	2.0	19.017	C
2 - R120 Newcastle Road (S)	219.00	219.00	197.42	6.74	199.10	1.109	198.37	187.03	34.7	33.3	215.423	F
3 - Lucan Shopping Centre	135.00	135.00	250.19	6.74	127.50	1.059	126.25	145.60	24.1	32.9	217.152	F
4 - R120 Newcastle Road (N)	342.00	342.00	57.67	6.74	312.51	1.099	312.12	318.77	56.1	86.1	212.703	F

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	102.00	102.00	282.12	8.26	152.33	0.670	102.00	102.57	2.0	2.0	17.888	C
2 - R120 Newcastle Road (S)	255.00	255.00	198.99	8.26	200.11	1.260	200.08	185.13	55.3	110.3	387.205	F
3 - Lucan Shopping Centre	155.00	155.00	243.30	8.26	132.09	1.173	131.73	155.77	32.9	56.1	219.593	F
4 - R120 Newcastle Road (N)	360.00	360.00	70.25	8.26	314.64	1.131	314.43	304.78	86.1	131.7	317.617	F

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	121.00	121.00	291.65	8.26	151.56	0.798	119.56	94.12	2.0	3.5	26.844	D
2 - R120 Newcastle Road (S)	230.00	230.00	221.33	8.26	191.14	1.188	191.14	189.88	110.3	149.5	619.153	F
3 - Lucan Shopping Centre	139.00	139.00	251.53	8.26	129.94	1.070	129.59	160.94	56.1	65.5	434.222	F
4 - R120 Newcastle Road (N)	370.00	370.00	68.84	8.26	316.97	1.177	316.93	312.27	131.7	184.8	454.827	F



Junctions 9
ARCADY 9 - Roundabout Module
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Filename: 20211117 C664_1 Lucan Arcady Lane Sim Saturday PM v1.20.j9
 Path: C:\Users\Gabrielalha\Desktop\Arcady lucan\V1.20
 Report generation date: 02/12/2021 10:22:41

- »2021 (Base Year) - Do Nothing, PM Saturday
- »2022 (YoO) - Do Nothing, PM Saturday
- »2022 (YoO) - Do Minimum, PM Saturday
- »2037 (YoO+15) - Do Nothing, PM Saturday
- »2037 (YoO+15) - Do Minimum, PM Saturday

Summary of junction performance

PM Saturday			
	Queue (Veh)	Delay (s)	RFC
2021 (Base Year) - Do Nothing			
1 - Esker Road	1.6	16.45	0.63
2 - R120 Newcastle Road (S)	25.0	122.34	1.05
3 - Lucan Shopping Centre	5.0	23.75	0.66
4 - R120 Newcastle Road (N)	10.0	27.29	0.63
2022 (YoO) - Do Nothing			
1 - Esker Road	1.8	18.13	0.66
2 - R120 Newcastle Road (S)	32.1	166.92	1.08
3 - Lucan Shopping Centre	5.6	25.49	0.67
4 - R120 Newcastle Road (N)	12.1	32.25	0.65
2022 (YoO) - Do Minimum			
1 - Esker Road	2.1	20.83	0.69
2 - R120 Newcastle Road (S)	48.0	268.99	1.12
3 - Lucan Shopping Centre	8.1	33.74	0.93
4 - R120 Newcastle Road (N)	16.9	42.97	0.98
2037 (YoO+15) - Do Nothing			
1 - Esker Road	5.6	49.47	0.37
2 - R120 Newcastle Road (S)	284.2	1022.91	1.38
3 - Lucan Shopping Centre	15.7	67.53	1.02
4 - R120 Newcastle Road (N)	120.6	298.27	1.16
2037 (YoO+15) - Do Minimum			
1 - Esker Road	6.3	54.22	0.69
2 - R120 Newcastle Road (S)	219.6	1116.97	1.42
3 - Lucan Shopping Centre	30.8	140.55	1.08
4 - R120 Newcastle Road (N)	147.5	359.56	1.19

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

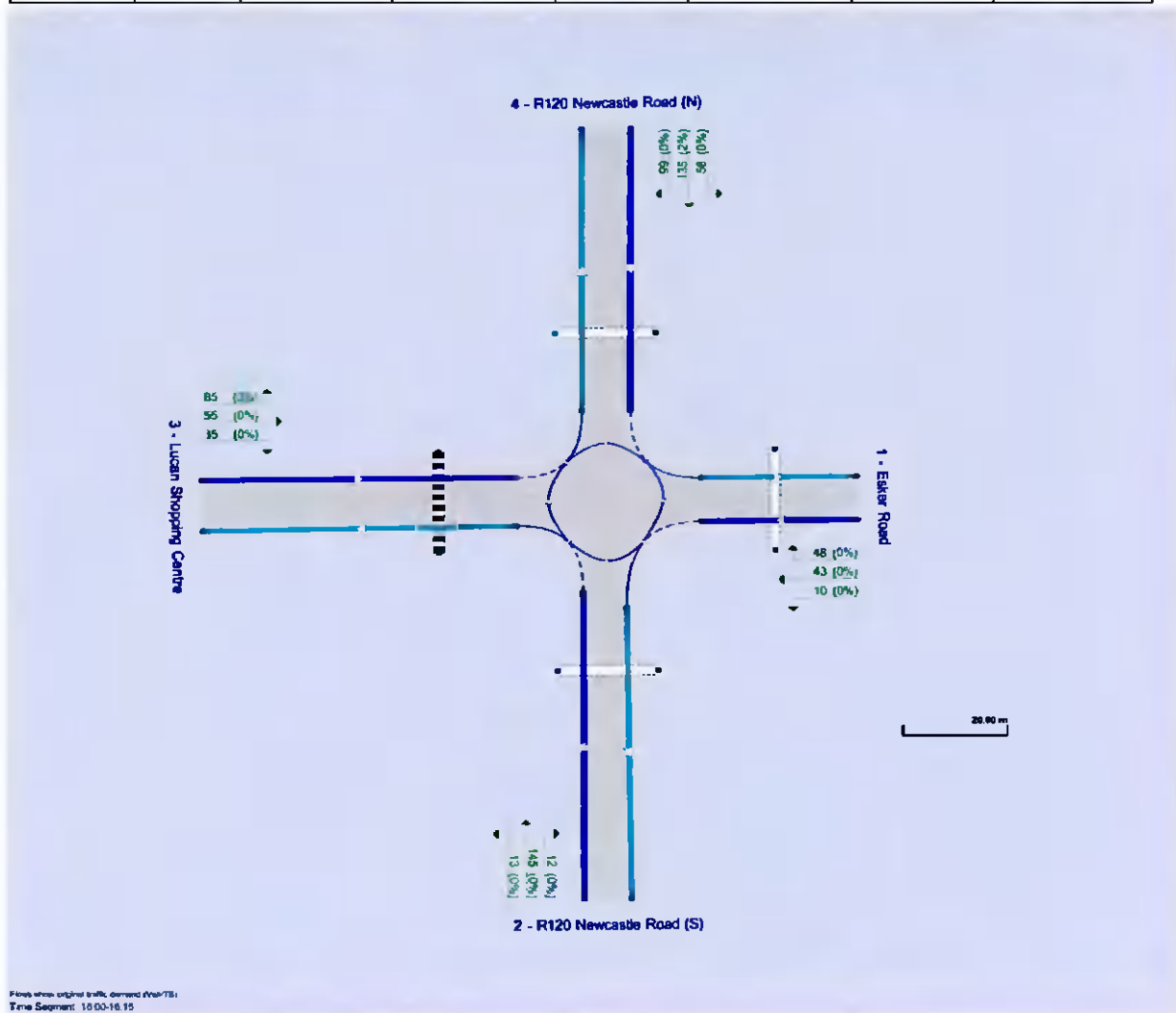
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalaha
Description	

Units

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



Files show original traffic demand (Veh/Tbl)
Time Segment: 16:00-16:15

The junction diagram reflects the last run of Junctions

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D02	2021 (Base Year) - Do Nothing	PM Saturday	DIRECT	16:00	17:00	60	15	✓
D04	2022 (YoO) - Do Nothing	PM Saturday	DIRECT	16:00	17:00	60	15	✓
D06	2022 (YoO) - Do Minimum	PM Saturday	DIRECT	16:00	17:00	60	15	✓
D08	2037 (YoO+15) - Do Nothing	PM Saturday	DIRECT	16:00	17:00	60	15	✓
D10	2037 (YoO+15) - Do Minimum	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 (Base Year) - Do Nothing, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	17.20	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	F - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.00	4.9	35.7	32.0	7.0	
3 - Lucan Shopping Centre	2.90	5.00	2.6	16.3	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.00	0.7	33.7	32.0	12.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queuing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	5.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.586	300.618
3 - Lucan Shopping Centre	0.523	263.412
4 - R120 Newcastle Road (N)	0.646	381.419

The slope and intercept shown above include any corrections and adjustments

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		-15.85
3 - Lucan Shopping Centre	Direct		47.00
4 - R120 Newcastle Road (N)	Direct		44.25

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D02	2021 (Base Year) - Do Nothing	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From					
		1 - Esker Road	0.00	10.00	43.00	48.00
		2 - R120 Newcastle Road (S)	12.00	4.00	13.00	145.00
		3 - Lucan Shopping Centre	55.00	35.00	0.00	85.00
		4 - R120 Newcastle Road (N)	56.00	135.00	99.00	2.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From					
		1 - Esker Road	0.00	5.00	35.00	53.00
		2 - R120 Newcastle Road (S)	8.00	2.00	26.00	118.00
		3 - Lucan Shopping Centre	36.00	35.00	0.00	86.00
		4 - R120 Newcastle Road (N)	61.00	152.00	114.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	8.00	30.00	45.00
		2 - R120 Newcastle Road (S)	3.00	0.00	8.00	165.00
		3 - Lucan Shopping Centre	45.00	28.00	0.00	94.00
		4 - R120 Newcastle Road (N)	59.00	167.00	117.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	3.00	36.00	35.00
		2 - R120 Newcastle Road (S)	15.00	5.00	21.00	126.00
		3 - Lucan Shopping Centre	41.00	23.00	0.00	93.00
		4 - R120 Newcastle Road (N)	41.00	170.00	94.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	50	0	0
		3 - Lucan Shopping Centre	0	0	0	2
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	3
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	4	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	0	0	6
		2 - R120 Newcastle Road (S)	0	0	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.63	16.45	1.6	C	87.75	351.01
2 - R120 Newcastle Road (S)	1.85	122.34	21.0	F	167.84	671.37
3 - Lucan Shopping Centre	0.86	23.75	5.0	C	164.00	655.99
4 - R120 Newcastle Road (N)	0.93	27.29	10.0	D	316.75	1266.98

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	101.00	101.00	270.14	7.50	162.56	0.621	99.43	119.65	0.0	1.6	13.932	B
2 - R120 Newcastle Road (S)	174.00	174.00	189.06	7.50	172.04	1.011	160.32	180.50	0.0	13.7	54.145	F
3 - Lucan Shopping Centre	175.00	175.00	197.56	7.50	204.12	0.857	170.02	151.82	0.0	5.0	23.753	C
4 - R120 Newcastle Road (N)	292.00	292.00	102.18	7.50	353.08	0.827	287.61	265.40	0.0	4.4	12.991	B

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	93.00	93.00	301.38	7.50	147.46	0.631	92.92	105.65	1.6	1.7	16.452	C
2 - R120 Newcastle Road (S)	154.00	154.00	200.97	7.50	162.56	0.946	153.51	193.33	13.7	14.1	86.302	F
3 - Lucan Shopping Centre	157.00	157.00	181.70	7.50	213.10	0.736	159.01	172.77	5.0	3.0	17.214	C
4 - R120 Newcastle Road (N)	327.00	327.00	82.53	7.50	367.67	0.855	324.50	258.19	4.4	6.9	19.604	D

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	83.00	83.00	309.68	7.50	141.60	0.586	83.19	106.44	1.7	1.5	15.476	C
2 - R120 Newcastle Road (S)	176.00	176.00	191.26	7.50	168.17	1.044	165.33	201.62	14.1	15.0	121.009	F
3 - Lucan Shopping Centre	167.00	167.00	201.23	7.50	202.80	0.823	165.81	155.36	3.0	4.2	23.423	C
4 - R120 Newcastle Road (N)	343.00	343.00	76.17	7.50	369.36	0.929	339.96	290.87	6.9	9.9	27.286	D

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	74.00	74.00	295.28	7.50	147.85	0.501	74.43	96.77	1.5	1.0	12.333	B
2 - R120 Newcastle Road (S)	167.00	167.00	167.11	7.50	177.91	0.945	170.34	202.59	25.0	21.5	122.337	F
3 - Lucan Shopping Centre	157.00	157.00	186.21	7.50	208.04	0.755	157.89	151.24	4.2	3.3	18.301	C
4 - R120 Newcastle Road (N)	305.00	305.00	82.33	7.50	368.29	0.828	309.71	261.76	9.9	5.2	16.406	C

2022 (YoO) - Do Nothing, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	59.89	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D04	2022 (YoO) - Do Nothing	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0.00	10.00	44.00	49.00
	2 - R120 Newcastle Road (S)	12.00	4.00	13.00	147.00	
	3 - Lucan Shopping Centre	56.00	36.00	0.00	86.00	
	4 - R120 Newcastle Road (N)	57.00	137.00	101.00	2.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0.00	5.00	36.00	54.00
		2 - R120 Newcastle Road (S)	8.00	2.00	26.00	120.00
		3 - Lucan Shopping Centre	37.00	36.00	0.00	87.00
		4 - R120 Newcastle Road (N)	62.00	155.00	116.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	8.00	30.00	46.00
		2 - R120 Newcastle Road (S)	3.00	0.00	8.00	168.00
		3 - Lucan Shopping Centre	46.00	28.00	0.00	96.00
		4 - R120 Newcastle Road (N)	60.00	170.00	119.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	8.00	3.00	37.00	36.00
		2 - R120 Newcastle Road (S)	15.00	5.00	21.00	128.00
		3 - Lucan Shopping Centre	42.00	23.00	0.00	95.00
		4 - R120 Newcastle Road (N)	42.00	173.00	96.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	50	0	0
		3 - Lucan Shopping Centre	0	0	0	2
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	3
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	4	0	0

Heavy Vehicle Percentages

 16:45 -
17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	6
	2 - R120 Newcastle Road (S)	0	0	0	6
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.66	18.13	1.8	C	89.50	358.02
2 - R120 Newcastle Road (S)	0.98	160.93	32.1	F	170.14	680.56
3 - Lucan Shopping Centre	0.87	25.49	5.6	D	167.00	667.98
4 - R120 Newcastle Road (N)	0.95	32.25	12.1	D	322.49	1289.96

Main Results for each time segment
16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	103.00	103.00	274.67	7.50	160.48	0.642	101.29	121.25	0.0	1.7	14.810	B
2 - R120 Newcastle Road (S)	176.00	176.00	192.80	7.50	169.89	0.936	159.94	183.15	0.0	16.1	111.987	F
3 - Lucan Shopping Centre	178.00	178.00	198.28	7.50	203.77	0.874	172.49	154.46	0.0	5.5	25.488	D
4 - R120 Newcastle Road (N)	297.00	297.00	103.69	7.50	353.49	0.840	292.23	267.07	0.0	4.8	13.778	B

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	95.00	95.00	306.75	7.50	144.24	0.659	94.86	107.58	1.7	1.9	18.133	C
2 - R120 Newcastle Road (S)	156.00	156.00	204.63	7.50	160.51	0.973	154.39	196.98	16.1	17.6	106.458	F
3 - Lucan Shopping Centre	160.00	160.00	183.93	7.50	211.94	0.755	162.21	175.08	5.5	3.3	18.834	D
4 - R120 Newcastle Road (N)	333.00	333.00	84.64	7.50	368.33	0.909	329.68	261.51	4.8	8.1	22.459	D

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	84.00	84.00	314.03	7.50	138.95	0.605	84.27	108.33	1.9	1.6	16.558	C
2 - R120 Newcastle Road (S)	179.00	179.00	194.04	7.50	166.61	0.976	164.96	204.26	17.6	31.9	149.269	F
3 - Lucan Shopping Centre	170.00	170.00	201.63	7.50	202.62	0.839	168.72	157.37	3.3	4.6	25.379	D
4 - R120 Newcastle Road (N)	349.00	349.00	77.29	7.50	368.65	0.947	345.07	293.06	8.1	12.0	32.254	D

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	76.00	76.00	301.09	7.50	144.42	0.526	76.44	98.29	1.6	1.1	13.329	B
2 - R120 Newcastle Road (S)	169.00	169.00	171.59	7.50	175.43	0.966	169.14	205.93	31.9	31.6	166.003	F
3 - Lucan Shopping Centre	160.00	160.00	186.96	7.50	207.68	0.770	160.98	153.77	4.6	3.6	19.720	C
4 - R120 Newcastle Road (N)	311.00	311.00	82.33	7.50	368.29	0.844	317.04	265.61	12.0	6.0	19.171	C

2022 (YoO) - Do Minimum, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	85.56	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D06	2022 (YoO) - Do Minimum	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0.00	10.00	46.00	49.00
	2 - R120 Newcastle Road (S)	12.00	4.00	14.00	147.00	
	3 - Lucan Shopping Centre	59.00	38.00	0.00	94.00	
	4 - R120 Newcastle Road (N)	57.00	137.00	108.00	2.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0.00	5.00	38.00	54.00
		2 - R120 Newcastle Road (S)	8.00	2.00	28.00	120.00
		3 - Lucan Shopping Centre	40.00	38.00	0.00	95.00
		4 - R120 Newcastle Road (N)	62.00	155.00	123.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	8.00	33.00	46.00
		2 - R120 Newcastle Road (S)	3.00	0.00	9.00	168.00
		3 - Lucan Shopping Centre	49.00	31.00	0.00	103.00
		4 - R120 Newcastle Road (N)	60.00	170.00	126.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	3.00	39.00	36.00
		2 - R120 Newcastle Road (S)	15.00	5.00	23.00	128.00
		3 - Lucan Shopping Centre	45.00	26.00	0.00	102.00
		4 - R120 Newcastle Road (N)	42.00	173.00	103.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	50	0	0
		3 - Lucan Shopping Centre	0	0	0	2
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	3
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	4	0	0

Heavy Vehicle Percentages

 16:45 -
17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	6
	2 - R120 Newcastle Road (S)	0	0	0	6
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.69	20.83	2.1	C	91.76	367.02
2 - R120 Newcastle Road (S)	1.12	263.09	45.0	F	171.71	686.85
3 - Lucan Shopping Centre	0.83	33.74	8.1	D	179.99	719.98
4 - R120 Newcastle Road (N)	0.96	41.17	16.9	E	329.49	1317.97

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	105.00	105.00	282.43	7.50	156.85	0.669	103.08	123.12	0.0	1.9	16.215	C
2 - R120 Newcastle Road (S)	177.00	177.00	201.26	7.50	164.98	1.073	157.09	184.26	0.0	19.9	72.000	F
3 - Lucan Shopping Centre	191.00	191.00	194.73	7.50	205.59	0.929	182.93	163.61	0.0	8.1	32.695	D
4 - R120 Newcastle Road (N)	304.00	304.00	107.10	7.50	352.21	0.863	298.45	270.56	0.0	5.6	15.440	C

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	97.00	97.00	314.65	7.50	139.57	0.695	96.76	110.62	1.9	2.2	20.833	C
2 - R120 Newcastle Road (S)	158.00	158.00	212.93	7.50	155.83	1.015	152.80	198.48	19.9	21.0	144.505	F
3 - Lucan Shopping Centre	173.00	173.00	181.39	7.50	213.32	0.811	176.31	184.34	8.1	4.7	26.064	D
4 - R120 Newcastle Road (N)	340.00	340.00	90.13	7.50	362.91	0.937	335.14	267.58	5.6	10.4	27.873	D

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	87.00	87.00	322.04	7.50	134.19	0.648	87.24	110.96	2.2	1.9	19.301	C
2 - R120 Newcastle Road (S)	180.00	180.00	203.12	7.50	161.49	1.116	160.89	206.15	25.0	44.1	207.000	F
3 - Lucan Shopping Centre	183.00	183.00	195.86	7.50	205.74	0.889	181.27	168.15	4.7	6.5	33.739	D
4 - R120 Newcastle Road (N)	356.00	356.00	83.38	7.50	364.93	0.970	349.61	293.74	10.4	16.8	42.965	E

16:45 - 17:00

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	78.00	78.00	313.22	7.50	137.46	0.568	78.56	100.76	1.9	1.4	15.432	C
2 - R120 Newcastle Road (S)	171.00	171.00	181.91	7.50	169.86	1.010	168.08	209.88	44.4	47.2	253.092	F
3 - Lucan Shopping Centre	173.00	173.00	185.58	7.50	208.56	0.830	174.09	164.40	6.5	5.4	27.135	D
4 - R120 Newcastle Road (N)	318.00	318.00	86.85	7.50	365.45	0.870	327.14	272.83	16.8	7.6	26.789	C

2037 (YoO+15) - Do Nothing, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	387.18	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D08	2037 (YoO+15) - Do Nothing	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	12.00	51.00	57.00
	2 - R120 Newcastle Road (S)	14.00	5.00	16.00	174.00
	3 - Lucan Shopping Centre	66.00	42.00	0.00	102.00
	4 - R120 Newcastle Road (N)	67.00	162.00	119.00	2.00

16:00 -
16:15

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0.00	6.00	42.00	63.00
		2 - R120 Newcastle Road (S)	10.00	3.00	31.00	142.00
		3 - Lucan Shopping Centre	43.00	42.00	0.00	103.00
		4 - R120 Newcastle Road (N)	73.00	183.00	137.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	10.00	36.00	54.00
		2 - R120 Newcastle Road (S)	4.00	0.00	10.00	199.00
		3 - Lucan Shopping Centre	54.00	34.00	0.00	113.00
		4 - R120 Newcastle Road (N)	71.00	202.00	140.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	4.00	43.00	42.00
		2 - R120 Newcastle Road (S)	18.00	6.00	25.00	152.00
		3 - Lucan Shopping Centre	49.00	28.00	0.00	111.00
		4 - R120 Newcastle Road (N)	49.00	204.00	113.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	8	0
		2 - R120 Newcastle Road (S)	0	54	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

16:45 - 17:00

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	7
2 - R120 Newcastle Road (S)	0	0	0	7
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.87	49.47	5.6	E	105.01	420.04
2 - R120 Newcastle Road (S)	1.38	1022.91	204.2	F	203.35	813.40
3 - Lucan Shopping Centre	1.02	67.53	15.7	F	196.75	787.00
4 - R120 Newcastle Road (N)	1.16	293.27	120.6	F	380.18	1520.72

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	120.00	120.00	305.94	7.50	137.43	0.873	114.90	133.42	0.0	5.1	34.610	E
2 - R120 Newcastle Road (S)	209.00	209.00	216.08	7.50	151.35	1.381	148.88	204.76	0.0	50.1	1022.91	F
3 - Lucan Shopping Centre	210.00	210.00	193.92	7.50	206.67	1.016	194.29	171.04	0.0	15.7	67.53	F
4 - R120 Newcastle Road (N)	350.00	350.00	113.46	7.50	339.43	1.031	325.90	274.76	0.0	24.1	43.762	E

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	111.00	111.00	333.93	7.50	127.39	0.870	110.43	120.00	5.1	5.7	49.467	E
2 - R120 Newcastle Road (S)	186.00	186.00	227.76	7.50	146.57	1.269	146.40	216.59	0.1	99.7	1021.420	F
3 - Lucan Shopping Centre	188.00	188.00	189.73	7.50	208.77	0.901	192.31	184.42	15.7	11.4	69.722	F
4 - R120 Newcastle Road (N)	393.00	393.00	99.35	7.50	356.14	1.102	354.58	282.69	24.1	82.5	119.625	F

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	100.00	100.00	329.51	7.50	128.37	0.779	101.73	121.11	5.7	4.0	35.731	E
2 - R120 Newcastle Road (S)	213.00	213.00	212.88	7.50	155.25	1.351	155.25	218.36	99.7	157.9	740.782	F
3 - Lucan Shopping Centre	201.00	201.00	191.15	7.50	207.95	0.927	198.08	176.99	11.4	14.3	67.531	F
4 - R120 Newcastle Road (N)	413.00	413.00	95.24	7.50	355.65	1.164	355.38	294.00	62.5	120.1	236.957	F

16:45 - 17:00

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	89.00	89.00	340.30	7.50	119.99	0.743	89.79	105.86	4.0	3.1	30.736	D
2 - R120 Newcastle Road (S)	201.00	201.00	202.04	7.50	158.75	1.285	158.72	228.05	157.9	200.1	1022.911	F
3 - Lucan Shopping Centre	188.00	188.00	193.84	7.50	204.40	0.920	188.73	166.92	14.3	13.6	62.856	F
4 - R120 Newcastle Road (N)	366.00	366.00	80.77	7.50	367.64	0.991	365.38	301.80	120.1	120.6	298.270	F

2037 (YoO+15) - Do Minimum, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	446.19	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2037 (YoO+15) - Do Minimum	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0.00	12.00	54.00	58.00
	2 - R120 Newcastle Road (S)	14.00	5.00	17.00	174.00	
	3 - Lucan Shopping Centre	69.00	44.00	0.00	109.00	
	4 - R120 Newcastle Road (N)	67.00	162.00	126.00	2.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0.00	6.00	44.00	63.00
		2 - R120 Newcastle Road (S)	10.00	3.00	32.00	142.00
		3 - Lucan Shopping Centre	47.00	44.00	0.00	110.00
		4 - R120 Newcastle Road (N)	73.00	183.00	144.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	10.00	38.00	54.00
		2 - R120 Newcastle Road (S)	4.00	0.00	11.00	199.00
		3 - Lucan Shopping Centre	57.00	36.00	0.00	120.00
		4 - R120 Newcastle Road (N)	71.00	202.00	147.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	4.00	46.00	42.00
		2 - R120 Newcastle Road (S)	18.00	6.00	26.00	152.00
		3 - Lucan Shopping Centre	53.00	30.00	0.00	119.00
		4 - R120 Newcastle Road (N)	49.00	204.00	120.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	54	0	0
		3 - Lucan Shopping Centre	0	0	0	3
		4 - R120 Newcastle Road (N)	0	3	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

 16:45 -
17:00

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	7
2 - R120 Newcastle Road (S)	0	0	0	7
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.89	54.02	6.3	F	107.77	431.07
2 - R120 Newcastle Road (S)	1.42	1116.97	219.6	F	204.65	818.60
3 - Lucan Shopping Centre	1.08	140.55	31.8	F	209.46	837.83
4 - R120 Newcastle Road (N)	1.19	359.56	147.5	F	387.31	1549.23

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	124.00	124.00	312.62	7.50	139.82	0.887	118.45	133.62	0.0	5.5	35.997	E
2 - R120 Newcastle Road (S)	210.00	210.00	226.25	7.50	150.21	1.398	147.83	205.03	0.0	62.2	600.846	F
3 - Lucan Shopping Centre	222.00	222.00	193.13	7.50	205.36	1.081	197.35	180.94	0.0	24.6	69.161	F
4 - R120 Newcastle Road (N)	357.00	357.00	113.83	7.50	346.24	1.031	332.61	276.66	0.0	30.4	43.434	E

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	113.00	113.00	334.50	7.50	127.45	0.887	112.24	121.98	5.5	6.3	54.021	F
2 - R120 Newcastle Road (S)	187.00	187.00	233.00	7.50	144.62	1.302	144.40	213.74	62.2	104.6	678.920	F
3 - Lucan Shopping Centre	201.00	201.00	187.49	7.50	210.08	0.956	201.07	189.91	24.6	24.5	108.234	F
4 - R120 Newcastle Road (N)	400.00	400.00	103.71	7.50	353.95	1.138	352.76	284.84	24.4	71.6	131.891	F

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	102.00	102.00	330.69	7.50	127.79	0.798	103.81	121.70	6.3	4.5	39.953	E
2 - R120 Newcastle Road (S)	214.00	214.00	216.22	7.50	152.21	1.415	152.21	216.27	104.6	166.0	604.479	F
3 - Lucan Shopping Centre	213.00	213.00	187.01	7.50	210.17	1.012	206.99	183.42	24.5	30.5	130.387	F
4 - R120 Newcastle Road (N)	420.00	420.00	99.24	7.50	353.32	1.192	353.15	294.76	71.6	138.5	272.364	F

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	92.00	92.00	340.80	7.50	119.76	0.769	92.81	108.91	4.5	3.7	34.644	D
2 - R120 Newcastle Road (S)	202.00	202.00	209.34	7.50	154.64	1.326	154.57	224.27	166.8	214.2	1116.967	F
3 - Lucan Shopping Centre	202.00	202.00	189.31	7.50	206.89	0.976	201.66	174.61	30.5	30.9	140.548	F
4 - R120 Newcastle Road (N)	373.00	373.00	86.54	7.50	363.82	1.020	363.18	304.43	138.5	148.1	359.565	F



Appendix D Do Something Model Outputs

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: 20211130 C664_1 Lucan Arcady Mitigation Friday AM v1.29.j9
 Path: C:\Users\Gabrielalha\Desktop\Arcady Lucan\V1.29
 Report generation date: 08/12/2021 21:58:07

- »2022 (YoO) - Do Something, AM Friday
- »2037 (YoO+15) - Do Something, AM Friday

Summary of junction performance

AM Friday			
	Queue (Veh)	Delay (s)	RFC
2022 (YoO) - Do Something			
1 - Esker Road	1.1	12.02	0.53
2 - R120 Newcastle Road (S)	28.7	170.82	1.10
3 - Lucan Shopping Centre	5.4	35.90	0.83
4 - R120 Newcastle Road (N)	13.0	39.18	0.96
2037 (YoO+15) - Do Something			
1 - Esker Road	1.9	17.21	0.67
2 - R120 Newcastle Road (S)	147.8	849.45	1.43
3 - Lucan Shopping Centre	17.8	31.33	1.33
4 - R120 Newcastle Road (N)	120.8	345.85	1.17

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

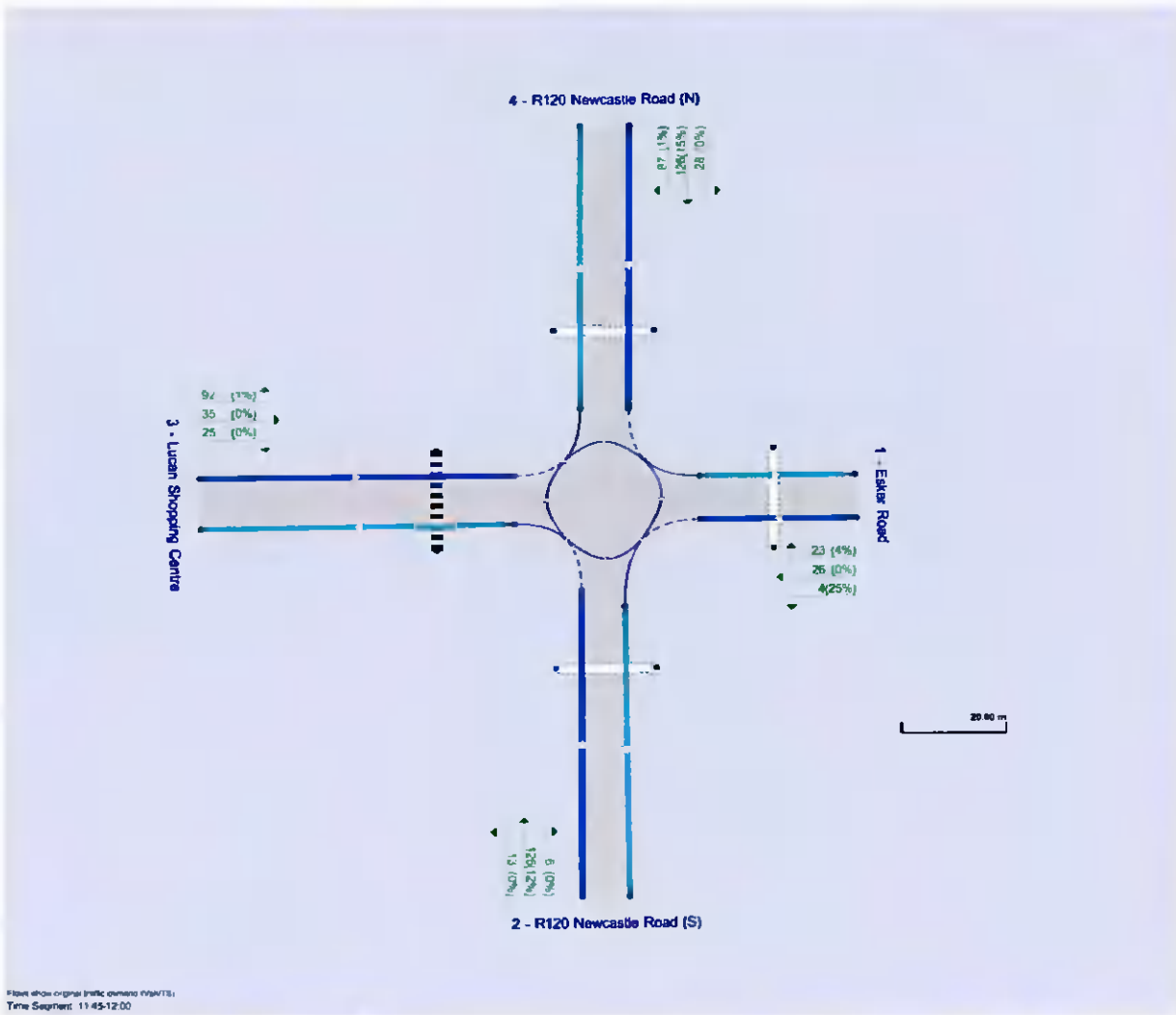
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

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



The junction diagram reflects the last run of Junctions

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D05	2022 (YoO) - Do Something	AM Friday	DIRECT	11:45	12:45	60	15	✓
D09	2037 (YoO+15) - Do Something	AM Friday	DIRECT	11:45	12:45	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 (YoO) - Do Something, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	67.19	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.20	7.5	20.7	32.0	7.5	
3 - Lucan Shopping Centre	2.90	6.30	3.4	23.6	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.30	2.0	22.7	32.0	12.5	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	5.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final Intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.587	310.281
3 - Lucan Shopping Centre	0.547	285.530
4 - R120 Newcastle Road (N)	0.649	391.905

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		-53.75
3 - Lucan Shopping Centre	Direct		-19.00
4 - R120 Newcastle Road (N)	Direct		-33.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D05	2022 (YoO) - Do Something	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
11:45 - 12:00	From				
	1 - Esker Road	0.00	4.00	26.00	23.00
	2 - R120 Newcastle Road (S)	6.00	1.00	13.00	126.00
	3 - Lucan Shopping Centre	35.00	25.00	0.00	92.00
	4 - R120 Newcastle Road (N)	28.00	126.00	87.00	0.00

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
12:00 - 12:15	From				
	1 - Esker Road	0.00	5.00	31.00	40.00
	2 - R120 Newcastle Road (S)	10.00	1.00	7.00	112.00
	3 - Lucan Shopping Centre	23.00	30.00	0.00	69.00
	4 - R120 Newcastle Road (N)	49.00	133.00	87.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	1.00	41.00	43.00
		2 - R120 Newcastle Road (S)	10.00	1.00	9.00	127.00
		3 - Lucan Shopping Centre	20.00	17.00	0.00	77.00
		4 - R120 Newcastle Road (N)	46.00	152.00	97.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	33.00	51.00
		2 - R120 Newcastle Road (S)	8.00	1.00	13.00	132.00
		3 - Lucan Shopping Centre	32.00	31.00	0.00	74.00
		4 - R120 Newcastle Road (N)	46.00	142.00	71.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	25	0	4
		2 - R120 Newcastle Road (S)	0	100	0	12
		3 - Lucan Shopping Centre	0	0	0	1
		4 - R120 Newcastle Road (N)	0	15	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	8
		2 - R120 Newcastle Road (S)	0	100	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	6	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	14
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	12	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	100	0	9
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	9	9	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.53	12.02	1.1	B	75.50	301.99
2 - R120 Newcastle Road (S)	1.19	17.82	31.7	F	144.16	576.65
3 - Lucan Shopping Centre	0.88	35.90	5.4	E	131.25	524.99
4 - R120 Newcastle Road (N)	0.96	39.19	13.0	E	267.02	1068.08

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	53.00	53.00	234.20	5.65	166.01	0.319	52.54	67.00	0.0	0.5	7.899	A
2 - R120 Newcastle Road (S)	146.00	146.00	133.98	5.65	159.28	0.917	139.11	152.75	0.0	6.9	36.948	E
3 - Lucan Shopping Centre	152.00	152.00	149.52	5.65	174.80	0.870	146.77	123.57	0.0	5.2	28.305	C
4 - R120 Newcastle Road (N)	241.00	241.00	64.60	5.65	290.32	0.830	236.60	231.68	0.0	4.4	15.670	C

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	76.00	76.00	249.64	6.74	163.88	0.464	75.62	81.81	0.5	0.8	10.152	B
2 - R120 Newcastle Road (S)	130.00	130.00	157.07	6.74	152.51	0.850	130.43	168.19	6.9	6.5	42.567	E
3 - Lucan Shopping Centre	122.00	122.00	162.92	6.74	171.22	0.712	124.60	124.57	5.2	2.6	20.248	C
4 - R120 Newcastle Road (N)	269.00	269.00	64.71	6.74	302.81	0.888	266.74	222.81	4.4	6.7	23.278	C

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	264.63	8.26	159.29	0.533	84.73	74.28	0.8	1.1	12.024	B
2 - R120 Newcastle Road (S)	147.00	147.00	181.47	8.26	134.15	1.009	130.99	167.90	6.5	22.5	117.119	F
3 - Lucan Shopping Centre	114.00	114.00	168.77	8.26	165.76	0.688	114.33	143.69	2.6	2.3	17.653	C
4 - R120 Newcastle Road (N)	298.00	298.00	47.27	8.26	309.39	0.964	291.64	235.83	6.7	13.1	39.191	E

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	88.00	88.00	248.48	8.26	169.20	0.520	88.02	85.55	1.1	1.1	11.093	B
2 - R120 Newcastle Road (S)	154.00	154.00	157.87	8.26	149.52	1.024	147.41	178.63	22.5	29.0	170.525	F
3 - Lucan Shopping Centre	137.00	137.00	187.51	8.26	156.22	0.877	133.86	117.77	2.3	5.4	35.899	E
4 - R120 Newcastle Road (N)	260.00	260.00	70.23	8.26	293.01	0.888	263.80	251.14	13.1	9.3	33.617	C

2037 (YoO+15) - Do Something, AM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	379.80	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D09	2037 (YoO+15) - Do Something	AM Friday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	5.00	30.00	28.00
	2 - R120 Newcastle Road (S)	7.00	1.00	15.00	152.00
	3 - Lucan Shopping Centre	41.00	29.00	0.00	107.00
	4 - R120 Newcastle Road (N)	34.00	153.00	101.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	6.00	36.00	47.00
		2 - R120 Newcastle Road (S)	12.00	1.00	8.00	133.00
		3 - Lucan Shopping Centre	27.00	35.00	0.00	80.00
		4 - R120 Newcastle Road (N)	58.00	159.00	101.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	1.00	47.00	50.00
		2 - R120 Newcastle Road (S)	12.00	1.00	11.00	154.00
		3 - Lucan Shopping Centre	23.00	19.00	0.00	89.00
		4 - R120 Newcastle Road (N)	54.00	183.00	112.00	4.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	5.00	38.00	60.00
		2 - R120 Newcastle Road (S)	10.00	1.00	15.00	158.00
		3 - Lucan Shopping Centre	37.00	36.00	0.00	86.00
		4 - R120 Newcastle Road (N)	55.00	171.00	83.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	28	0	5
		2 - R120 Newcastle Road (S)	0	100	0	14
		3 - Lucan Shopping Centre	0	0	0	1
		4 - R120 Newcastle Road (N)	0	18	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	0	0	9
		2 - R120 Newcastle Road (S)	0	100	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	7	7	1	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	16
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	14	0	0

Heavy Vehicle Percentages

12:30 - 12:45

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	2
	2 - R120 Newcastle Road (S)	0	100	0	11
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	10	11	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.67	17.21	1.9	C	88.25	352.98
2 - R120 Newcastle Road (S)	1.43	849.45	147.8	F	172.34	689.38
3 - Lucan Shopping Centre	1.05	81.33	17.8	F	152.24	608.98
4 - R120 Newcastle Road (N)	1.17	345.85	120.8	F	317.55	1270.21

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	63.00	63.00	265.03	5.65	144.72	0.435	62.25	74.48	0.0	0.8	10.816	B
2 - R120 Newcastle Road (S)	175.00	175.00	151.99	5.65	147.21	1.189	142.78	175.29	0.0	32.2	115.025	F
3 - Lucan Shopping Centre	177.00	177.00	158.21	5.65	168.29	1.052	159.29	136.56	0.0	17.7	65.635	F
4 - R120 Newcastle Road (N)	288.00	288.00	69.52	5.65	284.99	1.011	269.99	247.98	0.0	18.0	41.810	E

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	89.00	89.00	275.79	6.74	149.93	0.594	88.35	90.98	0.8	1.4	14.462	B
2 - R120 Newcastle Road (S)	154.00	154.00	175.51	6.74	140.03	1.083	139.29	188.63	32.2	46.8	274.007	F
3 - Lucan Shopping Centre	142.00	142.00	177.55	6.74	161.32	0.860	150.12	137.25	17.7	9.6	81.334	F
4 - R120 Newcastle Road (N)	318.00	318.00	75.33	6.74	293.69	1.060	291.44	252.34	18.0	44.7	107.920	F

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	98.00	98.00	276.00	8.26	153.17	0.639	97.70	80.73	1.4	1.7	16.116	C
2 - R120 Newcastle Road (S)	178.00	178.00	195.37	8.26	127.67	1.430	127.45	178.33	46.8	97.3	514.193	F
3 - Lucan Shopping Centre	131.00	131.00	172.81	8.26	164.30	0.797	136.16	150.00	9.6	4.4	35.755	E
4 - R120 Newcastle Road (N)	353.00	353.00	54.65	8.26	302.38	1.171	302.09	254.32	44.7	95.7	219.791	F

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	103.00	103.00	271.34	8.26	154.78	0.666	102.80	91.26	1.7	1.9	17.208	G
2 - R120 Newcastle Road (S)	184.00	184.00	180.77	8.26	132.14	1.357	132.09	193.36	97.3	149.1	849.447	F
3 - Lucan Shopping Centre	159.00	159.00	184.69	8.26	155.60	1.022	148.47	128.17	4.4	15.0	75.665	F
4 - R120 Newcastle Road (N)	310.00	310.00	76.74	8.26	286.09	1.087	285.85	256.42	35.7	119.9	345.854	F



Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: 20211130 C664_1 Lucan Arcady Mitigation Friday PM v1.29.j9
 Path: C:\Users\Gabrielalha\Desktop\Arcady Lucan\V1.29
 Report generation date: 08/12/2021 21:44:16

- »2022 (YoO) - Do Something, PM Friday
- »2037 (YoO+15) - Do Something, PM Friday

Summary of junction performance

PM Friday			
	Queue (Veh)	Delay (s)	RFC
2022 (YoO) - Do Something			
1 - Esker Road	0.9	9.29	0.47
2 - R120 Newcastle Road (S)	35.4	120.44	1.57
3 - Lucan Shopping Centre	4.8	33.98	0.36
4 - R120 Newcastle Road (N)	11.3	11.71	0.94
2037 (YoO+15) - Do Something			
1 - Esker Road	1.3	11.57	0.57
2 - R120 Newcastle Road (S)	170.7	824.17	1.36
3 - Lucan Shopping Centre	24.9	150.31	1.04
4 - R120 Newcastle Road (N)	121.7	354.81	1.15

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

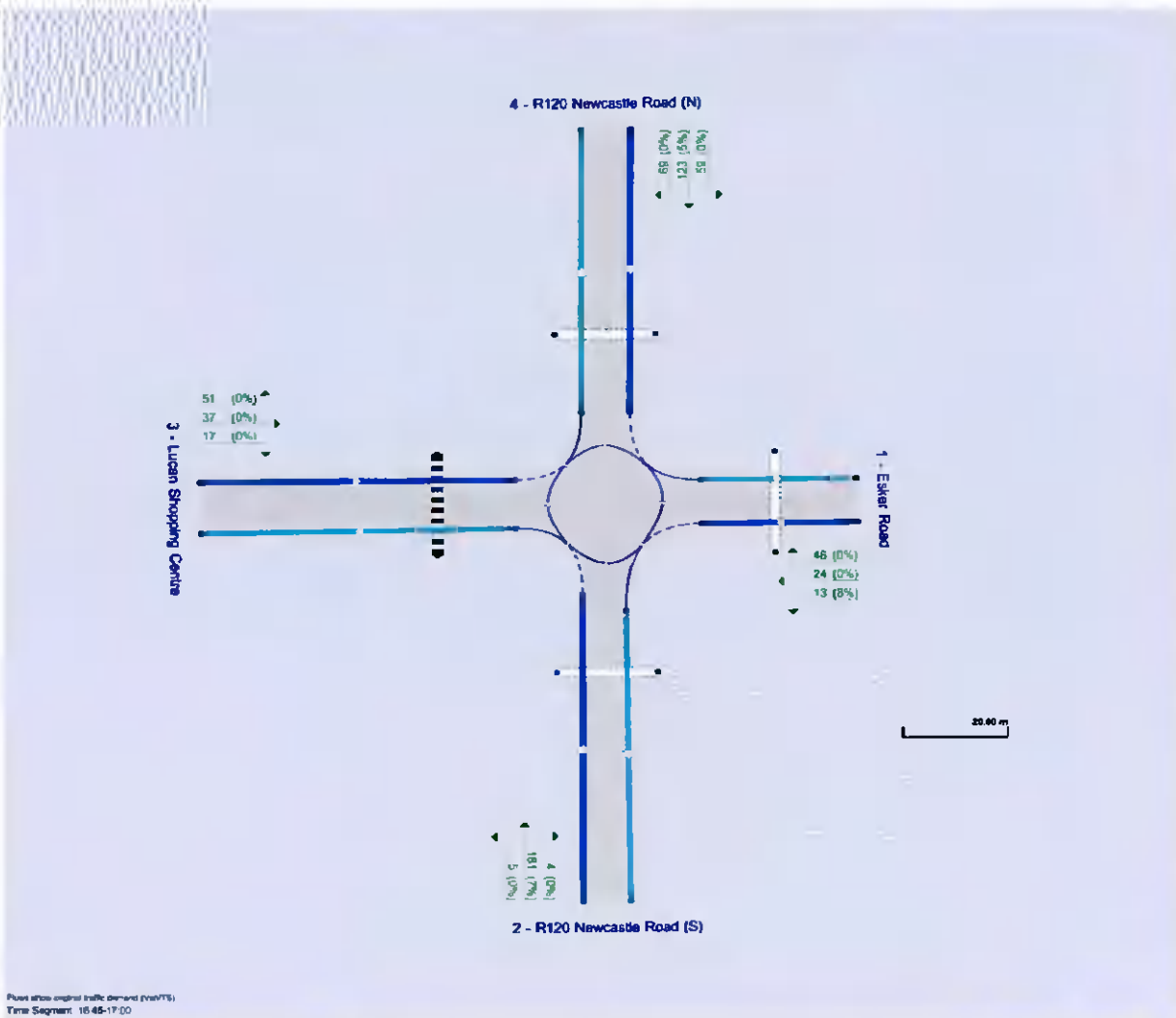
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

Distance units	Speed units	Traffic units Input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	Min	perMin



Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D06	2022 (YoO) - Do Something	PM Friday	DIRECT	16:45	17:45	60	15	✓
D10	2037 (YoO+15) - Do Something	PM Friday	DIRECT	16:45	17:45	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 (YoO) - Do Something, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	59.26	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.20	7.5	20.7	32.0	7.5	
3 - Lucan Shopping Centre	2.90	6.30	3.4	23.6	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.30	2.0	22.7	32.0	12.5	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and Junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	8.80	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	8.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.587	310.281
3 - Lucan Shopping Centre	0.547	285.530
4 - R120 Newcastle Road (N)	0.649	391.905

The slope and intercept shown above include any corrections and adjustments

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		-39.70
3 - Lucan Shopping Centre	Direct		-10.00
4 - R120 Newcastle Road (N)	Direct		-67.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D06	2022 (YoO) - Do Something	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From					
		1 - Esker Road	0.00	13.00	24.00	46.00
		2 - R120 Newcastle Road (S)	4.00	0.00	5.00	181.00
		3 - Lucan Shopping Centre	37.00	17.00	1.00	51.00
	4 - R120 Newcastle Road (N)	59.00	123.00	69.00	0.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From					
		1 - Esker Road	0.00	3.00	35.00	44.00
		2 - R120 Newcastle Road (S)	4.00	1.00	6.00	155.00
		3 - Lucan Shopping Centre	32.00	31.00	0.00	69.00
	4 - R120 Newcastle Road (N)	64.00	134.00	49.00	0.00	

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0.00	3.00	20.00	44.00
		2 - R120 Newcastle Road (S)	3.00	4.00	14.00	166.00
		3 - Lucan Shopping Centre	40.00	24.00	0.00	61.00
		4 - R120 Newcastle Road (N)	52.00	137.00	46.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From	1 - Esker Road	0.00	1.00	27.00	59.00
		2 - R120 Newcastle Road (S)	5.00	0.00	18.00	157.00
		3 - Lucan Shopping Centre	42.00	19.00	0.00	69.00
		4 - R120 Newcastle Road (N)	47.00	138.00	73.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	8	0	0
		2 - R120 Newcastle Road (S)	0	0	0	7
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	100	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	7	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0	0	0	2
		2 - R120 Newcastle Road (S)	0	25	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	2	10	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.47	9.29	0.9	A	79.75	319.00
2 - R120 Newcastle Road (S)	1.07	120.44	25.4	F	180.69	722.77
3 - Lucan Shopping Centre	0.89	33.98	4.8	D	123.25	493.00
4 - R120 Newcastle Road (N)	0.94	41.74	11.3	E	247.74	990.94

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	83.00	83.00	204.51	5.65	195.37	0.425	82.27	97.27	0.0	0.7	7.908	A
2 - R120 Newcastle Road (S)	190.00	190.00	137.52	5.65	178.02	1.067	169.67	149.26	0.0	20.3	68.265	F
3 - Lucan Shopping Centre	106.00	106.00	210.80	5.65	154.05	0.688	103.93	96.39	0.0	2.1	17.314	D
4 - R120 Newcastle Road (N)	251.00	251.00	57.50	5.65	280.70	0.894	244.29	257.23	0.0	6.7	21.795	C

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	82.00	82.00	213.17	6.74	189.71	0.432	81.98	99.14	0.7	0.8	8.350	A
2 - R120 Newcastle Road (S)	166.00	166.00	128.10	6.74	186.36	0.889	175.58	167.05	20.3	10.8	80.642	F
3 - Lucan Shopping Centre	132.00	132.00	213.43	6.74	153.94	0.856	129.25	90.24	2.1	4.8	33.167	D
4 - R120 Newcastle Road (N)	247.00	247.00	66.93	6.74	270.71	0.913	245.37	275.75	6.7	8.3	32.401	D

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	67.00	67.00	210.57	8.26	186.52	0.359	67.18	94.98	0.8	0.6	7.555	A
2 - R120 Newcastle Road (S)	187.00	187.00	110.20	8.26	194.09	0.964	184.18	167.55	10.8	13.5	69.041	F
3 - Lucan Shopping Centre	125.00	125.00	214.84	8.26	151.68	0.824	125.02	79.55	4.8	4.8	33.980	D
4 - R120 Newcastle Road (N)	235.00	235.00	70.57	8.26	262.17	0.897	234.97	269.28	8.3	8.4	32.698	D

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	87.00	87.00	227.83	8.26	183.21	0.475	86.68	93.26	0.6	0.9	9.292	A
2 - R120 Newcastle Road (S)	180.00	180.00	157.09	8.26	170.81	1.053	167.93	157.41	13.5	25.7	120.436	F
3 - Lucan Shopping Centre	130.00	130.00	210.25	8.26	156.46	0.831	129.99	114.77	4.8	4.8	33.825	D
4 - R120 Newcastle Road (N)	258.00	258.00	66.06	8.26	272.99	0.944	255.04	274.18	8.4	11.3	41.737	E

2037 (YoO+15) - Do Something, PM Friday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	412.08	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2037 (YoO+15) - Do Something	PM Friday	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	16.00	28.00	54.00
	2 - R120 Newcastle Road (S)	5.00	0.00	6.00	216.00
	3 - Lucan Shopping Centre	43.00	20.00	1.00	59.00
	4 - R120 Newcastle Road (N)	69.00	146.00	80.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0.00	4.00	40.00	52.00
		2 - R120 Newcastle Road (S)	5.00	1.00	7.00	183.00
		3 - Lucan Shopping Centre	37.00	37.00	0.00	81.00
		4 - R120 Newcastle Road (N)	75.00	160.00	57.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0.00	4.00	24.00	52.00
		2 - R120 Newcastle Road (S)	4.00	5.00	16.00	197.00
		3 - Lucan Shopping Centre	46.00	28.00	0.00	71.00
		4 - R120 Newcastle Road (N)	61.00	165.00	54.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:30 - 17:45	From	1 - Esker Road	0.00	1.00	31.00	69.00
		2 - R120 Newcastle Road (S)	6.00	0.00	21.00	186.00
		3 - Lucan Shopping Centre	49.00	22.00	0.00	81.00
		4 - R120 Newcastle Road (N)	55.00	165.00	85.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	9	0	0
		2 - R120 Newcastle Road (S)	0	0	0	8
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	6	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:00 - 17:15	From	1 - Esker Road	0	0	0	3
		2 - R120 Newcastle Road (S)	0	100	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	8	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
17:15 - 17:30	From	1 - Esker Road	0	0	0	3
		2 - R120 Newcastle Road (S)	0	28	0	7
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	2	11	0	0

Heavy Vehicle Percentages

 17:30 -
17:45

From	To			
	1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
1 - Esker Road	0	0	0	0
2 - R120 Newcastle Road (S)	0	0	0	6
3 - Lucan Shopping Centre	0	0	0	0
4 - R120 Newcastle Road (N)	0	7	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.57	11.57	1.3	B	93.75	375.00
2 - R120 Newcastle Road (S)	1.36	324.17	170.7	F	213.94	855.75
3 - Lucan Shopping Centre	1.04	150.31	24.9	F	143.75	575.00
4 - R120 Newcastle Road (N)	1.15	354.81	121.7	F	292.81	1171.22

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	98.00	98.00	223.54	5.65	184.22	0.532	96.89	107.37	0.0	1.1	10.183	B
2 - R120 Newcastle Road (S)	227.00	227.00	153.96	5.65	167.49	1.355	164.84	166.47	0.0	62.2	177.123	F
3 - Lucan Shopping Centre	123.00	123.00	213.87	5.65	151.70	0.811	119.32	104.93	0.0	3.7	25.499	F
4 - R120 Newcastle Road (N)	295.00	295.00	65.71	5.65	274.10	1.076	265.20	267.47	0.0	29.8	61.742	F

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	96.00	96.00	231.98	6.74	179.78	0.534	95.99	105.95	1.1	1.1	10.732	B
2 - R120 Newcastle Road (S)	196.00	196.00	145.85	6.74	173.72	1.120	173.61	182.12	62.2	84.7	385.284	F
3 - Lucan Shopping Centre	155.00	155.00	219.99	6.74	148.70	1.042	142.36	99.46	3.7	16.3	31.186	F
4 - R120 Newcastle Road (N)	292.00	292.00	73.03	6.74	265.99	1.103	264.90	289.32	29.8	56.9	158.574	F

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	80.00	80.00	228.87	8.26	176.59	0.453	80.29	105.53	1.1	0.8	9.375	A
2 - R120 Newcastle Road (S)	222.00	222.00	125.91	8.26	184.16	1.211	183.67	183.24	84.7	122.6	37.857	F
3 - Lucan Shopping Centre	145.00	145.00	225.54	8.26	144.99	1.009	141.13	84.04	16.3	30.2	128.834	F
4 - R120 Newcastle Road (N)	280.00	280.00	77.76	8.26	257.16	1.095	256.65	288.91	56.9	80.3	348.117	F

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	101.00	101.00	237.57	8.26	177.87	0.568	100.56	101.14	0.8	1.3	11.575	B
2 - R120 Newcastle Road (S)	213.00	213.00	165.85	8.26	162.92	1.294	162.92	172.29	122.6	172.8	824.169	F
3 - Lucan Shopping Centre	152.00	152.00	218.80	8.26	150.21	1.012	147.32	109.97	20.2	24.9	150.313	F
4 - R120 Newcastle Road (N)	305.00	305.00	75.94	8.26	262.83	1.150	262.77	290.17	80.3	122.6	354.813	F

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: 20211202 C664_1 Lucan Arcady Mitigation Saturday AM v1.29.j9
Path: C:\Users\Gabrielalha\Desktop\Arcady Lucan\V1.29
Report generation date: 08/12/2021 21:39:30

»2022 (YoO) - Do Something, AM Saturday
 »2037 (YoO+15) - Do Something, AM Saturday

Summary of junction performance

AM Saturday			
	Queue (Veh)	Delay (s)	RFC
2022 (YoO) - Do Something			
1 - Esker Road	2.0	17.87	0.68
2 - R120 Newcastle Road (S)	11.6	54.28	0.98
3 - Lucan Shopping Centre	5.7	39.35	0.88
4 - R120 Newcastle Road (N)	13.3	40.48	0.95
2037 (YoO+15) - Do Something			
1 - Esker Road	4.1	31.91	0.83
2 - R120 Newcastle Road (S)	118.0	481.74	1.22
3 - Lucan Shopping Centre	29.8	188.32	1.07
4 - R120 Newcastle Road (N)	156.8	378.61	1.15

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

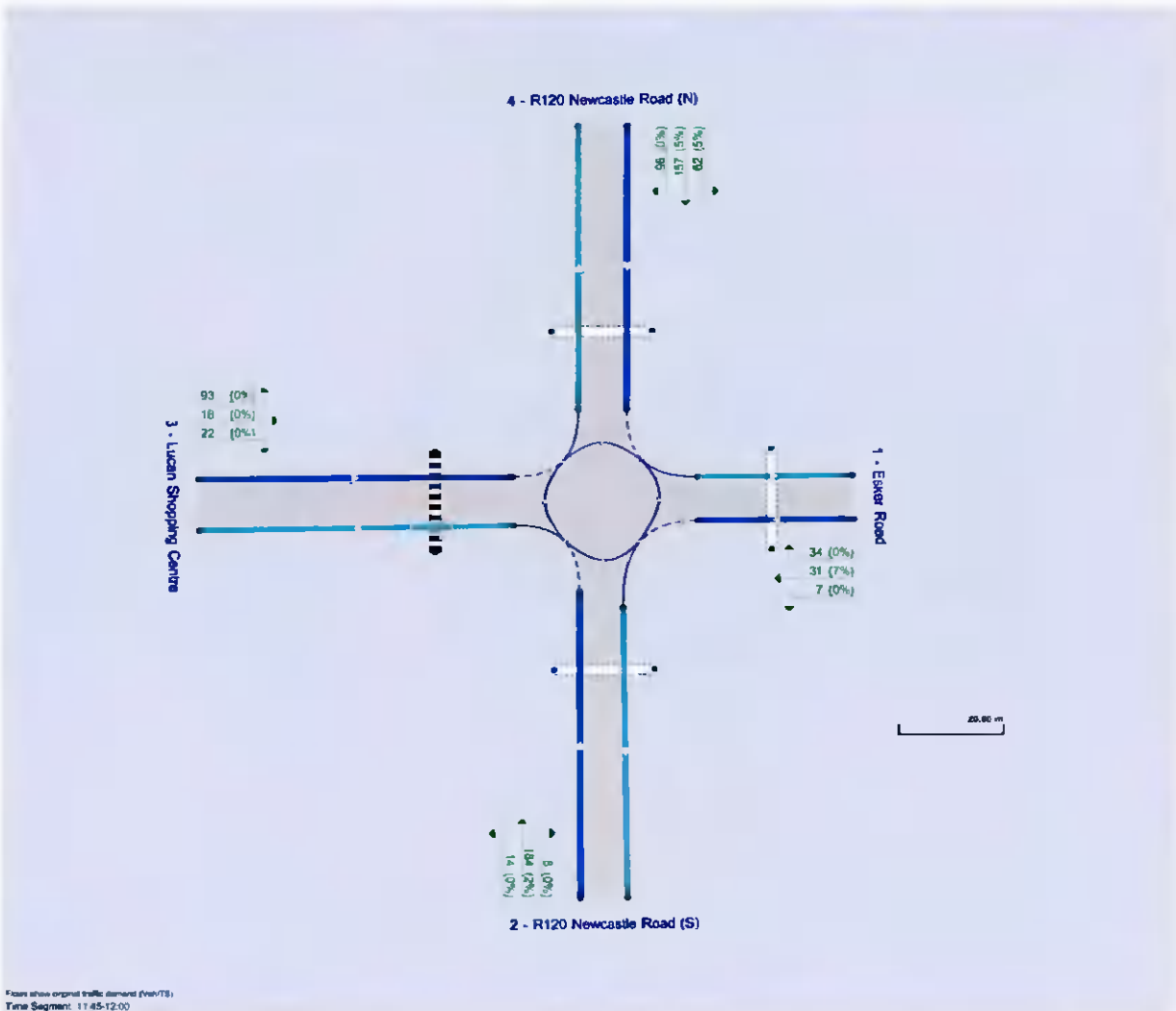
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

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



Flows show original traffic demand (Veh/TS)

Time Segment: 11:45-12:00

The junction diagram reflects the last run of Junctions

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D05	2022 (YoO) - Do Something	AM Saturday	DIRECT	11:45	12:45	60	15	✓
D09	2037 (YoO+15) - Do Something	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 (YoO) - Do Something, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	.11 .49	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.20	7.5	20.7	32.0	7.5	
3 - Lucan Shopping Centre	2.90	6.30	3.4	23.6	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.30	2.0	22.7	32.0	12.5	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	4.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	5.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final Intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.587	310.281
3 - Lucan Shopping Centre	0.547	285.530
4 - R120 Newcastle Road (N)	0.649	391.905

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		28.00
3 - Lucan Shopping Centre	Direct		2.20
4 - R120 Newcastle Road (N)	Direct		-12.50

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D05	2022 (YoO) - Do Something	AM Saturday	DIRECT	11.45	12.45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
11:45 - 12:00	From				
	1 - Esker Road	0.00	7.00	31.00	34.00
	2 - R120 Newcastle Road (S)	8.00	4.00	14.00	184.00
	3 - Lucan Shopping Centre	18.00	22.00	0.00	93.00
	4 - R120 Newcastle Road (N)	62.00	157.00	96.00	0.00

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
12:00 - 12:15	From				
	1 - Esker Road	0.00	5.00	31.00	49.00
	2 - R120 Newcastle Road (S)	9.00	4.00	6.00	165.00
	3 - Lucan Shopping Centre	26.00	15.00	0.00	75.00
	4 - R120 Newcastle Road (N)	42.00	147.00	98.00	3.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	4.00	34.00	49.00
		2 - R120 Newcastle Road (S)	8.00	4.00	19.00	183.00
		3 - Lucan Shopping Centre	42.00	20.00	0.00	72.00
		4 - R120 Newcastle Road (N)	59.00	149.00	98.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	3.00	40.00	60.00
		2 - R120 Newcastle Road (S)	10.00	0.00	4.00	180.00
		3 - Lucan Shopping Centre	28.00	23.00	0.00	68.00
		4 - R120 Newcastle Road (N)	44.00	161.00	106.00	4.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	0	7	0
		2 - R120 Newcastle Road (S)	0	50	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	5	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	40	0	0
		2 - R120 Newcastle Road (S)	22	50	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	9	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	50	0	0
		2 - R120 Newcastle Road (S)	0	50	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	3
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.68	17.87	2.0	C	86.74	346.97
2 - R120 Newcastle Road (S)	0.96	54.28	11.6	F	200.49	801.97
3 - Lucan Shopping Centre	0.88	35.35	5.7	E	125.50	502.00
4 - R120 Newcastle Road (N)	0.95	40.49	13.3	E	306.50	1226.00

Main Results for each time segment

11:45 - 12:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	72.00	72.00	269.86	5.65	154.28	0.467	71.14	85.19	0.0	0.9	10.719	B
2 - R120 Newcastle Road (S)	210.00	210.00	157.05	5.65	238.40	0.681	204.06	183.96	0.0	5.9	23.248	C
3 - Lucan Shopping Centre	133.00	133.00	224.05	5.65	162.18	0.820	129.10	137.06	0.0	3.9	24.896	C
4 - R120 Newcastle Road (N)	315.00	315.00	50.49	5.65	333.76	0.944	304.57	302.66	0.0	10.4	25.320	D

12:00 - 12:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	268.00	6.74	156.01	0.545	84.69	77.57	0.9	1.2	12.563	B
2 - R120 Newcastle Road (S)	184.00	184.00	180.77	6.74	217.98	0.845	184.19	171.93	5.9	5.8	27.094	B
3 - Lucan Shopping Centre	116.00	116.00	229.62	6.74	155.59	0.746	116.75	135.33	3.9	3.2	23.698	C
4 - R120 Newcastle Road (N)	290.00	290.00	54.00	6.74	327.05	0.857	291.57	292.37	10.4	8.9	26.760	D

12:15 - 12:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	87.00	87.00	269.35	8.26	161.54	0.539	87.00	106.99	1.2	1.2	12.072	B
2 - R120 Newcastle Road (S)	214.00	214.00	180.62	8.26	222.44	0.967	208.26	175.73	5.8	11.5	46.116	F
3 - Lucan Shopping Centre	134.00	134.00	239.20	8.26	151.89	0.832	131.47	149.68	3.2	5.7	35.354	E
4 - R120 Newcastle Road (N)	306.00	306.00	72.26	8.26	327.66	0.933	304.08	298.41	8.9	10.8	33.890	D

12:30 - 12:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	103.00	103.00	291.48	8.26	151.67	0.679	102.17	82.70	1.2	2.0	17.670	C
2 - R120 Newcastle Road (S)	194.00	194.00	207.97	8.26	210.26	0.922	194.07	185.68	11.5	11.5	54.277	F
3 - Lucan Shopping Centre	119.00	119.00	252.61	8.26	146.58	0.812	119.86	149.43	5.7	4.8	35.087	E
4 - R120 Newcastle Road (N)	315.00	315.00	61.71	8.26	331.06	0.953	312.47	310.75	10.8	13.3	42.458	E

2037 (YoO+15) - Do Something, AM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	336.5%	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D09	2037 (YoO+15) - Do Something	AM Saturday	DIRECT	11:45	12:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

11:45 - 12:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	8.00	37.00	40.00
	2 - R120 Newcastle Road (S)	10.00	5.00	17.00	217.00
	3 - Lucan Shopping Centre	21.00	26.00	0.00	109.00
	4 - R120 Newcastle Road (N)	74.00	186.00	112.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0.00	6.00	36.00	57.00
		2 - R120 Newcastle Road (S)	11.00	5.00	7.00	196.00
		3 - Lucan Shopping Centre	30.00	18.00	0.00	87.00
		4 - R120 Newcastle Road (N)	49.00	175.00	114.00	4.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0.00	5.00	40.00	57.00
		2 - R120 Newcastle Road (S)	10.00	5.00	23.00	217.00
		3 - Lucan Shopping Centre	48.00	24.00	0.00	83.00
		4 - R120 Newcastle Road (N)	69.00	177.00	114.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:30 - 12:45	From	1 - Esker Road	0.00	4.00	46.00	71.00
		2 - R120 Newcastle Road (S)	12.00	0.00	5.00	213.00
		3 - Lucan Shopping Centre	33.00	27.00	0.00	79.00
		4 - R120 Newcastle Road (N)	51.00	191.00	124.00	4.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
11:45 - 12:00	From	1 - Esker Road	0	0	8	0
		2 - R120 Newcastle Road (S)	0	54	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	6	5	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:00 - 12:15	From	1 - Esker Road	0	44	0	0
		2 - R120 Newcastle Road (S)	25	54	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	11	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
12:15 - 12:30	From	1 - Esker Road	0	54	0	0
		2 - R120 Newcastle Road (S)	0	54	0	5
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
12:30 - 12:45	From				
	1 - Esker Road	0	0	0	0
	2 - R120 Newcastle Road (S)	0	0	0	3
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	6	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.83	31.91	4.1	D	101.73	406.93
2 - R120 Newcastle Road (S)	1.22	481.74	118.4	F	237.76	951.05
3 - Lucan Shopping Centre	1.07	198.32	25.2	F	146.25	585.00
4 - R120 Newcastle Road (N)	1.15	378.61	156.8	F	360.95	1443.81

Main Results for each time segment

11:45 - 12:00

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	85.00	85.00	286.59	5.65	145.20	0.585	83.64	92.07	0.0	1.4	14.327	B
2 - R120 Newcastle Road (S)	249.00	249.00	172.99	5.65	228.56	1.089	220.75	197.25	0.0	28.3	70.339	F
3 - Lucan Shopping Centre	156.00	156.00	245.03	5.65	150.31	1.038	140.95	148.70	0.0	15.1	65.041	F
4 - R120 Newcastle Road (N)	372.00	372.00	55.76	5.65	329.48	1.129	322.90	330.22	0.0	49.1	77.086	F

12:00 - 12:15

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	99.00	99.00	293.29	6.74	140.26	0.706	98.12	86.97	1.4	2.2	20.901	C
2 - R120 Newcastle Road (S)	219.00	219.00	199.96	6.74	206.14	1.069	204.72	191.44	28.3	42.6	167.290	F
3 - Lucan Shopping Centre	135.00	135.00	256.66	6.74	139.36	0.967	133.66	148.03	15.1	16.4	114.656	F
4 - R120 Newcastle Road (N)	342.00	342.00	61.34	6.74	319.67	1.073	318.92	328.98	49.1	72.1	179.447	F

12:15 - 12:30

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	102.00	102.00	288.55	8.26	148.91	0.685	102.02	109.39	2.2	2.2	19.232	C
2 - R120 Newcastle Road (S)	255.00	255.00	200.55	8.26	208.47	1.218	208.31	190.01	42.6	89.3	296.357	F
3 - Lucan Shopping Centre	155.00	155.00	249.90	8.26	144.47	1.075	142.62	158.96	16.4	28.8	159.293	F
4 - R120 Newcastle Road (N)	360.00	360.00	77.40	8.26	320.85	1.110	320.54	315.12	72.1	111.8	264.747	F

12:30 - 12:45

Am	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	121.00	121.00	301.71	8.26	145.33	0.832	119.06	94.82	2.2	4.2	31.910	D
2 - R120 Newcastle Road (S)	230.00	230.00	224.09	8.26	199.25	1.144	199.25	196.68	89.3	120.4	481.740	F
3 - Lucan Shopping Centre	139.00	139.00	260.90	8.26	140.96	0.986	137.99	162.44	28.8	29.8	198.321	F
4 - R120 Newcastle Road (N)	370.00	370.00	71.90	8.26	324.73	1.148	324.63	326.99	111.8	157.2	378.607	F

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: 20211202 C664_1 Lucan Arcady Mitigation Saturday PM v1.29.j9
Path: C:\Users\Gabrielalha\Desktop\Arcady Lucan\V1.29
Report generation date: 08/12/2021 21:40:50

- »2022 (YoO) - Do Something, PM Saturday
- »2037 (YoO+15) - Do Something, PM Saturday

Summary of junction performance

PM Saturday			
	Queue (Veh)	Delay (s)	RFC
2022 (YoO) - Do Something			
1 - Esker Road	2.2	21.14	0.70
2 - R120 Newcastle Road (S)	27.8	139.75	1.06
3 - Lucan Shopping Centre	5.4	23.40	0.87
4 - R120 Newcastle Road (N)	12.5	32.51	0.88
2037 (YoO+15) - Do Something			
1 - Esker Road	7.8	66.81	0.92
2 - R120 Newcastle Road (S)	188.4	918.17	1.35
3 - Lucan Shopping Centre	16.3	57.96	1.22
4 - R120 Newcastle Road (N)	118.7	289.93	1.16

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

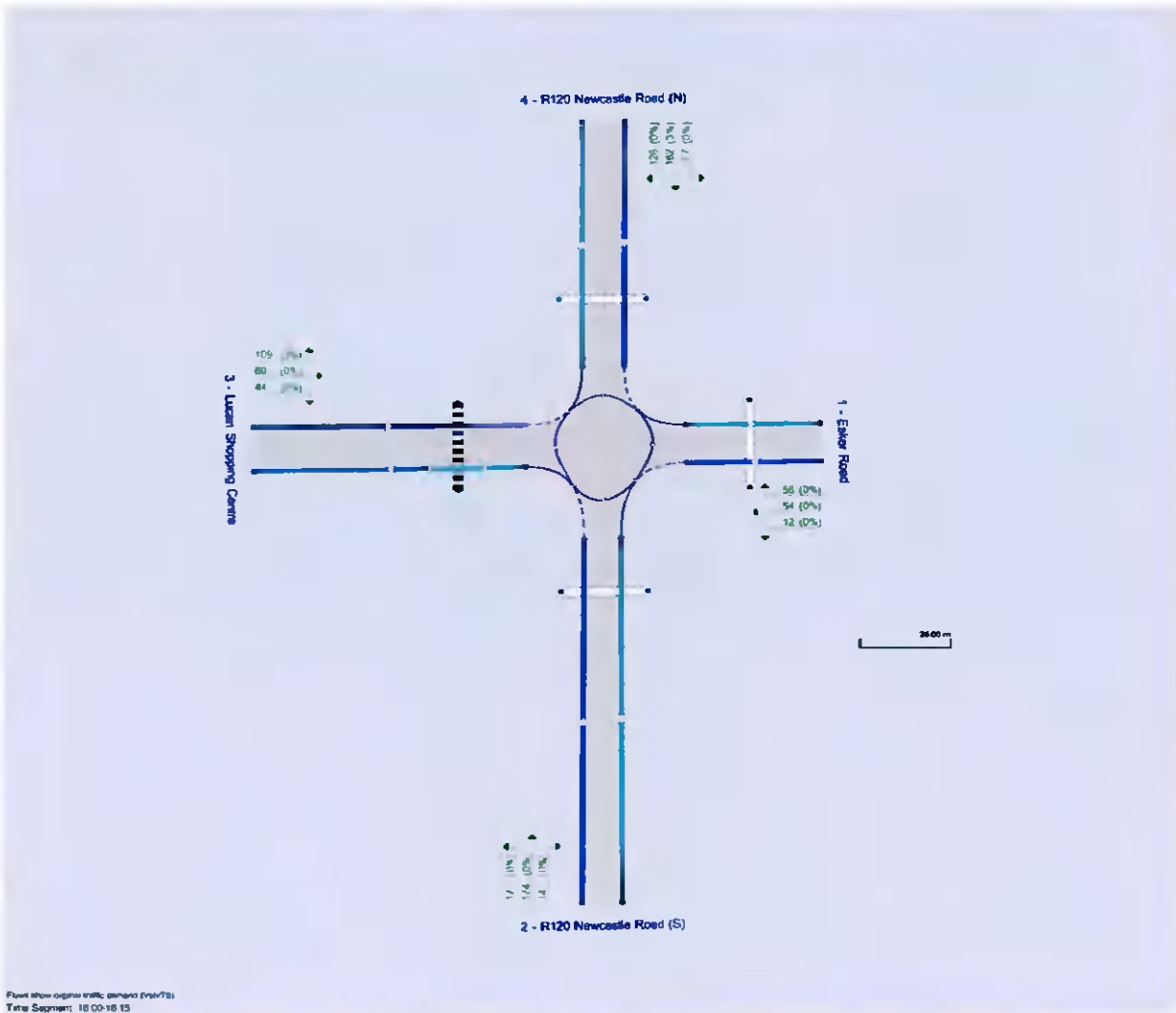
File summary

File Description

Title	
Location	
Site number	
Date	06/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Gabrielalha
Description	

Units

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



Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D06	2022 (YoO) - Do Something	PM Saturday	DIRECT	16.00	17.00	60	15	✓
D10	2037 (YoO+15) - Do Something	PM Saturday	DIRECT	16.00	17.00	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 (YoO) - Do Something, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	63.21	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Esker Road	
2	R120 Newcastle Road (S)	
3	Lucan Shopping Centre	
4	R120 Newcastle Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Esker Road	3.20	5.70	4.7	22.4	32.0	15.5	
2 - R120 Newcastle Road (S)	3.00	4.20	7.5	20.7	32.0	7.5	
3 - Lucan Shopping Centre	2.90	6.30	3.4	23.6	32.0	27.5	
4 - R120 Newcastle Road (N)	4.50	5.30	2.0	22.7	32.0	12.5	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
3 - Lucan Shopping Centre	5.50	4.50		Distance	6.00	4.29

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1 - Esker Road	3.90	3.00	2.90	1.00	6.00	6.00	7.00
2 - R120 Newcastle Road (S)	4.40	3.00	2.90	1.00	6.00	6.00	7.00
4 - R120 Newcastle Road (N)	6.80	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final Intercept (PCU/TS)
1 - Esker Road	0.595	329.843
2 - R120 Newcastle Road (S)	0.587	310.281
3 - Lucan Shopping Centre	0.547	285.530
4 - R120 Newcastle Road (N)	0.649	391.905

The slope and intercept shown above include any corrections and adjustments

Arm Capacity Adjustments

Arm	Type	Reason	Direct capacity adjustment (PCU/TS)
2 - R120 Newcastle Road (S)	Direct		-15.85
3 - Lucan Shopping Centre	Direct		47.00
4 - R120 Newcastle Road (N)	Direct		44.25

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D06	2022 (YoO) - Do Something	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

16:00 -
16:15

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	10.00	46.00	49.00
	2 - R120 Newcastle Road (S)	12.00	4.00	14.00	147.00
	3 - Lucan Shopping Centre	59.00	38.00	0.00	94.00
	4 - R120 Newcastle Road (N)	57.00	137.00	108.00	2.00

Demand (Veh/TS)

16:15 -
16:30

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0.00	5.00	38.00	54.00
	2 - R120 Newcastle Road (S)	8.00	2.00	28.00	120.00
	3 - Lucan Shopping Centre	40.00	38.00	0.00	95.00
	4 - R120 Newcastle Road (N)	62.00	155.00	123.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	8.00	33.00	46.00
		2 - R120 Newcastle Road (S)	3.00	0.00	9.00	168.00
		3 - Lucan Shopping Centre	49.00	31.00	0.00	103.00
		4 - R120 Newcastle Road (N)	60.00	170.00	126.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	3.00	39.00	36.00
		2 - R120 Newcastle Road (S)	15.00	5.00	23.00	126.00
		3 - Lucan Shopping Centre	45.00	26.00	0.00	102.00
		4 - R120 Newcastle Road (N)	42.00	173.00	103.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	50	0	0
		3 - Lucan Shopping Centre	0	0	0	2
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	3
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	4	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0	0	0	6
		2 - R120 Newcastle Road (S)	0	0	0	6
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.70	21.14	2.2	C	91.76	367.02
2 - R120 Newcastle Road (S)	1.00	139.73	27.8	F	171.62	686.46
3 - Lucan Shopping Centre	0.87	23.40	5.4	C	180.00	719.99
4 - R120 Newcastle Road (N)	0.95	32.51	12.5	D	329.50	1317.98

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	105.00	105.00	283.63	7.50	156.22	0.672	103.06	124.45	0.0	1.9	16.391	C
2 - R120 Newcastle Road (S)	177.00	177.00	201.47	7.50	174.16	1.016	162.74	185.22	0.0	14.3	55.058	F
3 - Lucan Shopping Centre	191.00	191.00	199.93	7.50	220.01	0.868	185.61	164.28	0.0	5.4	23.403	C
4 - R120 Newcastle Road (N)	304.00	304.00	108.97	7.50	360.22	0.844	299.11	276.57	0.0	4.9	13.790	B

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	97.00	97.00	315.69	7.50	138.92	0.698	96.75	110.52	1.9	2.2	21.142	C
2 - R120 Newcastle Road (S)	158.00	158.00	213.47	7.50	164.58	0.961	156.86	198.97	14.3	15.3	91.006	F
3 - Lucan Shopping Centre	173.00	173.00	184.17	7.50	229.44	0.754	175.13	186.16	5.4	3.3	17.173	C
4 - R120 Newcastle Road (N)	340.00	340.00	89.55	7.50	373.31	0.911	336.65	269.75	4.9	8.2	22.429	D

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	87.00	87.00	323.75	7.50	133.17	0.653	87.22	111.27	2.2	2.0	19.725	C
2 - R120 Newcastle Road (S)	180.00	180.00	203.89	7.50	170.13	1.059	167.79	207.08	15.3	27.7	136.046	F
3 - Lucan Shopping Centre	183.00	183.00	203.64	7.50	218.70	0.837	181.72	168.04	3.3	4.5	23.360	C
4 - R120 Newcastle Road (N)	356.00	356.00	83.15	7.50	375.07	0.949	351.86	302.20	8.2	12.4	32.508	D

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	78.00	78.00	311.33	7.50	138.60	0.563	78.63	101.66	2.0	1.3	15.169	C
2 - R120 Newcastle Road (S)	171.00	171.00	180.87	7.50	179.26	0.956	171.75	209.09	27.7	26.9	139.697	F
3 - Lucan Shopping Centre	173.00	173.00	187.39	7.50	224.84	0.769	173.98	165.22	4.5	3.6	18.077	C
4 - R120 Newcastle Road (N)	318.00	318.00	88.85	7.50	374.26	0.849	324.14	272.53	12.4	6.2	19.637	C

2037 (YoO+15) - Do Something, PM Saturday

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	353.88	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2037 (YoO+15) - Do Something	PM Saturday	DIRECT	16:00	17:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - Esker Road		DIRECT	✓	100.000
2 - R120 Newcastle Road (S)		DIRECT	✓	100.000
3 - Lucan Shopping Centre		DIRECT	✓	100.000
4 - R120 Newcastle Road (N)		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
1 - Esker Road	[DIRECT]
2 - R120 Newcastle Road (S)	[DIRECT]
3 - Lucan Shopping Centre	[DIRECT]
4 - R120 Newcastle Road (N)	[DIRECT]

Origin-Destination Data

Demand (Veh/TS)

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
16:00 - 16:15	From				
	1 - Esker Road	0.00	12.00	54.00	58.00
	2 - R120 Newcastle Road (S)	14.00	5.00	17.00	174.00
	3 - Lucan Shopping Centre	69.00	44.00	0.00	109.00
	4 - R120 Newcastle Road (N)	67.00	162.00	126.00	2.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0.00	6.00	44.00	63.00
		2 - R120 Newcastle Road (S)	10.00	3.00	32.00	142.00
		3 - Lucan Shopping Centre	47.00	44.00	0.00	110.00
		4 - R120 Newcastle Road (N)	73.00	183.00	144.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0.00	10.00	38.00	54.00
		2 - R120 Newcastle Road (S)	4.00	0.00	11.00	199.00
		3 - Lucan Shopping Centre	57.00	36.00	0.00	120.00
		4 - R120 Newcastle Road (N)	71.00	202.00	147.00	0.00

Demand (Veh/TS)

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:45 - 17:00	From	1 - Esker Road	0.00	4.00	46.00	42.00
		2 - R120 Newcastle Road (S)	18.00	6.00	26.00	152.00
		3 - Lucan Shopping Centre	53.00	30.00	0.00	119.00
		4 - R120 Newcastle Road (N)	49.00	204.00	120.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:00 - 16:15	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	54	0	0
		3 - Lucan Shopping Centre	0	0	0	3
		4 - R120 Newcastle Road (N)	0	3	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:15 - 16:30	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	100	0	2
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	2	0	0

Heavy Vehicle Percentages

		To				
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)	
16:30 - 16:45	From	1 - Esker Road	0	0	0	0
		2 - R120 Newcastle Road (S)	0	0	0	4
		3 - Lucan Shopping Centre	0	0	0	0
		4 - R120 Newcastle Road (N)	0	5	0	0

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		1 - Esker Road	2 - R120 Newcastle Road (S)	3 - Lucan Shopping Centre	4 - R120 Newcastle Road (N)
From	1 - Esker Road	0	0	0	7
	2 - R120 Newcastle Road (S)	0	0	0	7
	3 - Lucan Shopping Centre	0	0	0	0
	4 - R120 Newcastle Road (N)	0	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - Esker Road	0.92	66.81	7.8	F	107.77	431.08
2 - R120 Newcastle Road (S)	1.35	216.17	163.4	F	204.47	817.87
3 - Lucan Shopping Centre	1.02	87.96	16.3	F	209.48	837.92
4 - R120 Newcastle Road (N)	1.16	289.93	118.7	F	387.34	1549.37

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	124.00	124.00	317.83	7.50	136.74	0.907	117.79	137.53	0.0	6.2	39.850	F
2 - R120 Newcastle Road (S)	210.00	210.00	227.02	7.50	159.01	1.321	156.11	208.60	0.0	53.9	167.095	F
3 - Lucan Shopping Centre	222.00	222.00	200.45	7.50	218.59	1.016	205.84	182.68	0.0	16.2	48.908	E
4 - R120 Newcastle Road (N)	357.00	357.00	118.90	7.50	352.85	1.012	336.47	287.39	0.0	20.5	37.986	E

16:15 - 16:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	113.00	113.00	342.29	7.50	122.69	0.921	111.40	124.32	6.2	7.8	66.807	F
2 - R120 Newcastle Road (S)	187.00	187.00	234.96	7.50	152.40	1.234	152.13	218.73	53.9	88.6	426.880	F
3 - Lucan Shopping Centre	201.00	201.00	192.60	7.50	224.78	0.853	206.67	194.49	16.2	10.5	54.277	F
4 - R120 Newcastle Road (N)	400.00	400.00	106.13	7.50	362.32	1.104	360.49	293.13	20.5	60.0	110.396	F

16:30 - 16:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	102.00	102.00	338.34	7.50	123.21	0.828	104.15	124.12	7.8	5.7	51.184	F
2 - R120 Newcastle Road (S)	214.00	214.00	221.76	7.50	159.27	1.357	159.27	220.73	43.9	143.5	360.157	F
3 - Lucan Shopping Centre	213.00	213.00	195.86	7.50	222.76	0.856	210.52	185.17	10.5	12.9	57.958	F
4 - R120 Newcastle Road (N)	420.00	420.00	99.96	7.50	362.79	1.161	362.50	306.42	60.0	117.6	226.151	F

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Esker Road	92.00	92.00	348.89	7.50	115.24	0.800	93.13	110.74	5.7	4.5	43.018	E
2 - R120 Newcastle Road (S)	202.00	202.00	211.58	7.50	162.07	1.262	161.96	230.44	143.9	183.8	918.169	F
3 - Lucan Shopping Centre	202.00	202.00	195.13	7.50	220.77	0.915	202.54	178.40	12.9	12.4	53.110	F
4 - R120 Newcastle Road (N)	373.00	373.00	88.40	7.50	372.96	0.996	371.23	309.28	117.6	119.2	289.935	F

Appendix E Swept Path Analysis Drawings

