Proposed Housing Development at Lahard, Ballinamore, Co. Leitrim

Traffic Survey and Analysis Report

22nd December 2020

Prepared for

WGG Architects

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TTRSA
Traffic : Transport : Road Safety

Document Control Sheet

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1/1	Draft	09/07/2020
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Distribution

Organisation	Copies
WGG Architects	1 Electronic

Contents

Non-technical summary

- TTRSA has been commissioned by WGG Architects to undertake a 12-hour traffic survey and prepare a traffic survey report and associated analysis for a proposed housing development at Lahard, Ballinamore, Co. Leitrim, as part of a forthcoming Part VIII planning application by Leitrim County Council.
- The proposed development consists of ten residential units (four 2-bed and six 3-bed), accessed from the R199/Lahard/Trathnona Estate junction.
- The site layout drawing of the proposed development, upon which the analysis contained within this report is based, has been prepared by WGG Architects, entitled 'Site Location, Site Layout and Images'; Drawing Number: PL20-006-025; Dated: 04/12/2020.
- TTRSA undertook a 12-hour video based traffic survey between 07:00 and 18:59 hours inclusive, of through traffic and turning movements at the R199/Lahard/Trathnona Estate junction on Thursday 5th March 2020, before the introduction of national restrictions on movement due to COVID-19. The traffic survey recorded a total of 2319 vehicle movements.
- The peak traffic flows identified from the traffic count data are an AM peak hour of 08:30-09:29 and a PM peak hour of 17:15-18-14, both inclusive. The count data shows 228 AM peak hour traffic movements, and 283 PM peak hour traffic movements, at the R199/Lahard/Trathnona Estate junction.
- The predicted trip generation for the proposed development, based on a survey of a residential estate in Co. Leitrim, is two arrivals and three departures in the AM peak hour and five arrivals and four departures in the PM peak hour.
- To ensure that the analysis of the impact of the development on the existing R199/Lahard/Trathnona Estate junction is robust, the trip generation applied within the traffic modelling is slightly higher, being based on the number and size of the proposed residential units.
- Local traffic has been growthed to the opening year of 2021 and future assessment years of 2026 and 2036 using standard growth factors from the National Transport Model which is consistent with prevailing Transport Infrastructure Ireland guidelines.
- The operation of the existing R199/Lahard/Trathnona Estate junction has been assessed using the industry standard traffic modelling software package PICADY. The modelling covers the AM and PM peak hour scenarios in the opening and future assessment years, with and without the proposed development.
- The modelling output shows that the impact of the proposed development on the operation of the existing junction is negligible, and that the junction will operate with a large amount of spare capacity and minimal queueing in all of the scenarios tested.

1 Introduction

1.1 Traffic Transport and Road Safety Associates

Traffic Transport and Road Safety Associates Ltd. (TTRSA) is a specialist Traffic Engineering and Transport Planning practice, based in Ireland. The senior managers within TTRSA have extensive experience of developing traffic management schemes, assessing the transport related impacts of development and improving road safety both nationally and internationally.

TTRSA has been commissioned by WGG Architects to undertake a 12-hour traffic survey and prepare a traffic survey report and associated analysis for a proposed housing development at Lahard, Ballinamore, Co. Leitrim, as part of a forthcoming Part VIII planning application by Leitrim County Council.

1.2 Proposed development

The proposed development consists of ten residential units (four 2-bed and six 3-bed), accessed from the R199/Lahard/Trathnona Estate junction.

A scaled copy of the site layout drawing of the proposed development prepared by WGG Architects, entitled 'Site Location, Site Layout and Images'; Drawing Number: PL20-006-025; Dated: 04/12/2020, is included for information within Appendix A, and provides the basis of the analysis contained within this traffic report.

1.3 Format of this report

This traffic report has been prepared in accordance with the agreed design brief for the housing scheme, with cognisance of the Transport Infrastructure Ireland (TII) document 'Traffic and Transport Assessment Guidelines' (PE-PDV-02045) published in May 2014. The remaining sections of this report are set out as follows:

- Chapter 2 provides details of the traffic survey methodology and key findings of the traffic survey; and,
- Chapter 3 provides details of the analysis of the traffic impact of the proposed development, including trip generation, distribution, assignment and junction operation.

2 Traffic survey

2.1 Traffic survey methodology

TTRSA undertook a 12-hour video based traffic survey, between 07:00 and 18:59 hours inclusive, of through traffic and turning movements at the R199/Lahard/Trathnona Estate junction on Thursday 5th March 2020, before the introduction of national restrictions on movement due to COVID-19. During the survey period no extreme weather events or traffic related incidents were recorded. The traffic survey recorded a total of 2319 vehicle movements.

Data from the traffic survey video was coded into 15 minute periods, classified into bicycles; motorcycles; cars and light goods vehicles (LGV); and, heavy goods vehicles (HGV) and public service vehicles[1] (PSV).

For the purpose of this analysis contained within Section 3 of this report, the traffic count data has also been converted into Passenger Car Units (PCUs), using factors of: 0.2 for bicycles; 0.4 for motorcycles; 1.0 for cars and LGVs (including those towing trailers); and 2.3 for buses and all types of rigid and articulated HGV and PSV.

The coded traffic count data, including PCU values, is included within Appendix B of this report.

2.2 Peak traffic flows

The peak traffic flows identified from the traffic count data are an AM peak hour of 08:30-09:29 and a PM peak hour of 17:15-18-14, both inclusive. The count data shows 228 AM peak hour traffic movements, and 283 PM peak hour traffic movements, at the R199/Lahard/Trathnona Estate junction.

1 buses and coaches

3 Analysis of development impact

3.1 Predicted trip vehicular generation

Peak hour vehicular trip generation for the proposed development (Table 3.1) has been predicted based on a trip generation survey undertaken in Ballinamore, Co. Leitrim in March 2020. The average number of trips per residential unit in each peak hour is 0.6. This number of peak hour trips is consistent with typical levels of residential trip generation contained within databases such as TRICS.

Table 3.1 – Predicted vehicular trip generation (PCUs)

Peak Period	Arrivals	Departures
AM Peak	2	3
PM Peak	5	4

3.2 Modelled trip vehicular generation

To ensure that the analysis of the impact of the development on the existing R199/Lahard/Trathnona Estate junction is robust, the trip generation applied within the traffic modelling detailed in Section 3.6 has been based on the number and size of the proposed residential units: 0.5 arrivals and departures for each one-bed and two-bed dwelling; 0.75 arrivals and departures for each three-bed dwelling; and, one arrival and departure for each four-bed dwelling, during each of the peak hours. The modelled vehicular trip generation for the proposed development is detailed in Table 3.2 and incorporated into Appendix C.

Table 3.2 – Modelled vehicular trip generation (PCUs)

Peak Period	Arrivals	Departures
AM Peak	8.5	8.5
PM Peak	8.5	8.5

3.3 Modal split

No modal split targets have been set for the development. The 2016 Census modal split for journeys to work in Ballinamore was reported as: Walk 13%; Cycle <1%; Public Transport 3%; Car/Van 83%; and, other <1%, and for journeys to school in Ballinamore was reported as: Walk 38%; Cycle 1%; Public Transport 8%; and, Car 53%.

3.4 Trip distribution and assignment

For the purpose of this assessment, trips to and from the proposed development have been distributed and assigned taking account of existing AM and PM peak hour traffic movements on the R199 at the Lahard junction. This approach takes into account a number of factors including the distance to and availability of facilities and commuting based trips. The distribution and assignment of development related trips is detailed in Appendix D.

3.5 Opening and future year traffic

Subject to development proceeding as proposed, it is assumed for the purpose of this traffic report that the proposed development will be fully constructed during 2021/2. Local traffic has been growthed to the opening year and future assessment years of 2026 and 2036 using the Central Growth assumptions for link based growth in Ballinamore (Zone 104) contained in the TII PE-PAG-02017 NTpM Zones Shapefile (May 2019 version), taking account of 9.2% HCVs. The growth factors applied being:

- From 2020 to 2021 a factor of 1.010;
- From 2020 to 2026 a factor of 1.063; and,
- From 2020 to 2036 a factor of 1.086.

The impact of this traffic growth is detailed within Appendix C.

3.6 Assessment of junction operation

The operation of the existing R199/Lahard/Trathnona Estate junction has been assessed using the industry standard traffic modelling software package PICADY. The modelling covers the AM and PM peak hour scenarios in the opening and future assessment years, with and without the proposed development. Traffic movements related to all scenarios are detailed within Appendix C.

The assessment has been undertaken using PCU values. The criteria used to assess the performance of a junction for a given traffic demand within the aforementioned traffic modelling software are:

- Ratio of Flow to Capacity (RFC) is a measure of junction performance in terms of saturation. A value of 1.00, which can also be considered as 100% saturation, represents an arm of the junction operating at maximum capacity, in that any increase in the rate of vehicles arriving on the link will result in significant additional queue lengths. Traditionally a figure of 0.85 or 85% is the maximum acceptable degree of saturation for priority junctions, with anything above this figure being considered to be congested.
- Queue lengths (measured in PCUs) are primarily used to check for blocking back through adjacent junctions.

The results of the assessment are summarised in Table 3.3 and the output file is presented in Appendix D.

The modelling output shows that the impact of the proposed development on the operation of the existing R199/Lahard/Trathnona Estate junction is negligible, and that the junction will operate with a large amount of spare capacity and minimal queueing, in all of the scenarios tested. The modelling output shows that with the proposed development in place, the junction has 95.7% spare capacity in the 2036 AM peak hour, and 95.4% spare capacity in the 2036 PM peak hour.

Table 3.3 – Summary of PICADY output for the existing R199/Lahard/Trathnona Estate junction

Scenarios	AM Peak Hour		PM Peak Hour	
	Max RFC	Max Queue (Vehicles)	Max RFC	Max Queue (Vehicles)
2021 without development	0.023	0.02	0.028	0.03
2026 without development	0.025	0.03	0.030	0.03
2036 without development	0.025	0.03	0.030	0.03
2021 with development	0.041	0.04	0.044	0.05
2026 with development	0.041	0.04	0.046	0.05
2036 with development	0.043	0.04	0.046	0.05

Appendix A

Site Layout Drawing (prepared by WGG Architects)

Drawing Title: Site Location, Site Layout and Images
Drawing Number: PL20-006-025
Drawing Dated: 04/12/2020

Scaled drawing for information only

Notes

Lahard
Railway Terrace
Willows
2 car parking
Existing 4 car parking
Move existing tree (TBC)
3 car parking
Existing Light Post (TBC)
3 car parking
Existing 4 car parking
3 car parking
4 car parking
Existing Enclosed Play Court
Area: 573.5 m²
4 car parking
Existing Open Space To Be Landscaped
Area: 3,735.7 m²
Existing 4 car parking
4 car parking
Woodland Planting With Understorey Shub Planting To Provide Screening
Woodland Planting With Understorey Shub Planting To Provide Screening
Woodland Planting With Understorey Shub Planting To Provide Screening
Location of Site Notice Marked "X"
Existing Woodland Planting with Understorey Shrub Planting To Be Retained
1A-2A
3A-4A
N

Site Boundary
Area: 0.936 Hectares (2.312 Acres)

Comhairle Chontae Liatroma
Leitrim County Council

Purpose of Issue

Wynne Gormley Gilsenan Architects & Surveyors Ltd.

JOB DETAILS
Proposed Housing Development
Lahard, Ballinamore, Co. Leitrim
Leitrim County Council

Scale @ A1: 1:500, 1:1
Dwg.no: PL 20-006-025
Amend.
Date: 04/12/2020
Description: Site Layout & Images
Drawn by: J. McDermott
Checked by: E. Gilsenan

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1 Site Layout 1:500

Y:\A-2020\20-006 Leitrim County Council\3.0 Part 8 Planning\2.2 Planning Drawing Files\20-006 Ballinamore Site Layout.pln

Appendix B

Traffic Count Data and PCU Conversion

12-hour Manual Classified (Video) Count Thursday 5th March 2020
R199/Lahard/Trathnona Estate junction, Ballinamore, Co. Leitrim

Arm A – R199 to/from east
Arm B – Lahard to/from development
Arm C – R199 to/from west
Arm D – Trathnona Estate

PCU Factors

Cycle	0.2
Motorcycle	0.4
Car/LGV	1
HGV/PSV	2.3

Incidents None

Bicycle	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
07:00 – 07:14	0	0	0	0	0	0	0	0	0	0	0	0
07:15 – 07:29	0	0	0	0	0	0	0	0	0	0	0	0
07:30 – 07:44	0	0	0	0	0	0	0	0	0	0	0	0
07:45 – 07:59	0	0	0	0	0	0	0	0	0	0	0	0
08:00 – 08:14	0	0	0	0	0	0	0	0	0	0	0	0
08:15 – 08:29	0	0	0	0	0	0	0	0	0	0	0	0
08:30 – 08:44	0	0	0	0	0	0	0	0	0	0	0	0
08:45 – 08:59	0	0	0	0	0	0	0	0	0	0	0	0
09:00 – 09:14	0	0	0	0	0	0	0	0	0	0	0	0
09:15 – 09:29	0	0	0	0	0	0	0	0	0	0	0	0
09:30 – 09:44	0	0	0	0	0	0	0	0	0	0	0	0
09:45 – 09:59	0	0	0	0	0	0	0	0	0	0	0	0
10:00 – 10:14	0	0	0	0	0	0	0	0	0	0	0	0
10:15 – 10:29	0	0	0	0	0	0	0	0	0	0	0	0
10:30 – 10:44	0	0	0	0	0	0	0	0	0	0	0	0
10:45 – 10:59	0	0	0	0	0	0	0	0	0	0	0	0
11:00 – 11:14	0	0	0	0	0	0	0	0	0	0	0	0
11:15 – 11:29	0	0	0	0	0	0	0	0	0	0	0	0
11:30 – 11:44	0	0	0	0	0	0	0	0	0	0	0	0
11:45 – 11:59	0	0	0	0	0	0	0	0	0	0	0	0
12:00 – 12:14	0	0	0	0	0	0	0	0	0	0	0	0
12:15 – 12:29	0	1	0	0	0	0	0	0	0	0	0	0
12:30 – 12:44	0	0	0	0	0	0	0	0	0	0	0	0
12:45 – 12:59	0	0	0	0	0	0	1	0	0	0	0	0
13:00 – 13:14	0	0	0	0	0	0	0	0	0	0	0	0
13:15 – 13:29	0	0	0	0	0	0	0	0	0	0	0	0
13:30 – 13:44	0	0	0	0	0	0	0	0	0	0	0	0
13:45 – 13:59	0	0	0	0	0	0	0	0	0	0	0	0
14:00 – 14:14	0	0	0	0	0	0	0	0	0	0	0	0
14:15 – 14:29	0	0	0	0	0	0	0	0	0	0	0	0
14:30 – 14:44	0	0	0	0	0	0	0	0	0	0	0	0
14:45 – 14:59	0	0	0	0	0	0	0	0	0	0	0	0
15:00 – 15:14	0	0	0	0	0	0	0	0	0	0	0	0
15:15 – 15:29	0	0	0	0	0	0	0	0	0	0	0	0
15:30 – 15:44	0	0	0	0	0	0	0	0	0	0	0	0
15:45 – 15:59	0	0	0	0	0	0	0	0	0	0	0	0
16:00 – 16:14	0	0	0	0	0	0	0	0	0	0	0	0
16:15 – 16:29	0	0	0	0	0	0	0	0	0	0	0	0
16:30 – 16:44	0	0	0	0	0	0	0	0	0	0	0	0
16:45 – 16:59	0	0	0	0	0	0	0	0	0	0	0	0
17:00 – 17:14	0	0	0	0	0	0	0	0	0	0	0	0
17:15 – 17:29	0	0	0	0	0	0	0	0	0	0	0	0
17:30 – 17:44	0	0	0	0	0	0	0	0	0	0	0	0
17:45 – 17:59	0	0	0	0	0	0	0	0	0	0	0	0
18:00 – 18:14	0	0	0	0	0	0	0	0	0	0	0	0
18:15 – 18:29	0	0	0	0	0	0	0	0	0	0	0	0
18:30 – 18:44	0	0	0	0	0	0	0	0	0	0	0	0
18:45 – 18:59	0	0	0	0	0	0	0	0	0	0	0	0

Motorcycle	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
07:00 – 07:14	0	0	0	0	0	0	0	0	0	0	0	0
07:15 – 07:29	0	0	0	0	0	0	0	0	0	0	0	0
07:30 – 07:44	0	0	0	0	0	0	0	0	0	0	0	0
07:45 – 07:59	0	0	0	0	0	0	0	0	0	0	0	0
08:00 – 08:14	0	0	0	0	0	0	0	0	0	0	0	0
08:15 – 08:29	0	0	0	0	0	0	0	0	0	0	0	0
08:30 – 08:44	0	0	0	0	0	0	0	0	0	0	0	0
08:45 – 08:59	0	0	0	0	0	0	0	0	0	0	0	0
09:00 – 09:14	0	0	0	0	0	0	0	0	0	0	0	0
09:15 – 09:29	0	0	0	0	0	0	0	0	0	0	0	0
09:30 – 09:44	0	0	0	0	0	0	0	0	0	0	0	0
09:45 – 09:59	0	0	0	0	0	0	0	0	0	0	0	0
10:00 – 10:14	0	0	0	0	0	0	0	0	0	0	0	0
10:15 – 10:29	0	0	0	0	0	0	0	0	0	0	0	0
10:30 – 10:44	0	0	0	0	0	0	0	0	0	0	0	0
10:45 – 10:59	0	0	0	0	0	0	0	0	0	0	0	0
11:00 – 11:14	0	0	0	0	0	0	0	0	0	0	0	0
11:15 – 11:29	0	0	0	0	0	0	0	0	0	0	0	0
11:30 – 11:44	0	0	0	0	0	0	0	0	0	0	0	0
11:45 – 11:59	0	0	0	0	0	0	0	0	0	0	0	0
12:00 – 12:14	0	0	0	0	0	0	0	0	0	0	0	0
12:15 – 12:29	0	0	0	0	0	0	0	0	0	0	0	0
12:30 – 12:44	0	0	0	0	0	0	0	0	0	0	0	0
12:45 – 12:59	0	0	0	0	0	0	0	0	0	0	0	0
13:00 – 13:14	0	0	0	0	0	0	0	0	0	0	0	0
13:15 – 13:29	0	0	0	0	0	0	0	0	0	0	0	0
13:30 – 13:44	0	0	0	0	0	0	0	0	0	0	0	0
13:45 – 13:59	0	0	0	0	0	0	0	0	0	0	0	0
14:00 – 14:14	0	0	0	0	0	0	0	0	0	0	0	0
14:15 – 14:29	0	0	0	0	0	0	0	0	0	0	0	0
14:30 – 14:44	0	0	0	0	0	0	0	0	0	0	0	0
14:45 – 14:59	0	0	0	0	0	0	0	0	0	0	0	0
15:00 – 15:14	0	0	0	0	0	0	0	0	0	0	0	0
15:15 – 15:29	0	0	0	0	0	0	0	0	0	0	0	0
15:30 – 15:44	0	0	0	0	0	0	0	0	0	0	0	0
15:45 – 15:59	0	0	0	0	0	0	0	0	0	0	0	0
16:00 – 16:14	0	0	0	0	0	0	0	0	0	0	0	0
16:15 – 16:29	0	0	0	0	0	0	0	0	0	0	0	0
16:30 – 16:44	0	0	0	0	0	0	0	0	0	0	0	0
16:45 – 16:59	0	0	0	0	0	0	0	0	0	0	0	0
17:00 – 17:14	0	0	0	0	0	0	0	0	0	0	0	0
17:15 – 17:29	0	0	0	0	0	0	0	0	0	0	0	0
17:30 – 17:44	0	0	0	0	0	0	0	0	0	0	0	0
17:45 – 17:59	0	0	0	0	0	0	0	0	0	0	0	0
18:00 – 18:14	0	0	0	0	0	0	0	0	0	0	0	0
18:15 – 18:29	0	0	0	0	0	0	0	0	0	0	0	0
18:30 – 18:44	0	0	0	0	0	0	0	0	0	0	0	0
18:45 – 18:59	0	0	0	0	0	0	0	0	0	0	0	0

Car/LGV	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
07:00 – 07:14	1	8	0	0	3	0	11	0	0	0	0	0
07:15 – 07:29	0	16	0	0	1	0	15	0	0	0	0	0
07:30 – 07:44	0	9	0	0	1	0	11	1	0	0	0	0
07:45 – 07:59	0	9	0	0	3	0	15	2	0	0	0	0
08:00 – 08:14	0	16	0	3	0	0	24	1	0	0	0	0
08:15 – 08:29	0	17	0	0	1	0	16	0	1	0	0	0
08:30 – 08:44	0	18	0	0	4	0	28	1	0	0	0	1
08:45 – 08:59	2	27	0	0	3	0	32	2	0	0	0	0
09:00 – 09:14	1	20	0	0	2	0	23	1	1	0	0	0
09:15 – 09:29	0	22	0	0	2	1	18	0	0	0	0	0
09:30 – 09:44	0	18	0	0	4	0	22	2	0	0	0	2
09:45 – 09:59	0	9	1	1	1	0	12	1	0	0	0	0
10:00 – 10:14	0	16	0	0	1	0	8	1	0	0	0	0
10:15 – 10:29	1	20	1	0	1	0	10	2	1	0	0	0
10:30 – 10:44	0	12	0	0	3	1	14	2	2	1	0	1
10:45 – 10:59	0	18	1	0	2	0	11	1	0	0	0	1
11:00 – 11:14	0	22	1	0	2	0	18	3	0	1	0	1
11:15 – 11:29	0	30	0	0	3	0	16	1	1	0	0	0
11:30 – 11:44	0	12	1	0	1	0	13	2	2	0	0	1
11:45 – 11:59	2	24	1	0	2	0	18	5	0	1	0	3
12:00 – 12:14	0	10	0	0	3	0	16	0	2	1	0	0
12:15 – 12:29	0	12	0	0	2	0	14	1	1	0	0	0
12:30 – 12:44	0	10	0	1	2	0	12	5	2	0	0	2
12:45 – 12:59	0	18	1	0	4	0	16	4	2	0	0	2
13:00 – 13:14	3	11	0	0	2	0	18	2	1	1	0	1
13:15 – 13:29	0	13	0	0	3	0	11	3	0	0	0	0
13:30 – 13:44	0	17	0	0	3	0	24	1	0	0	0	2
13:45 – 13:59	0	15	0	2	1	0	12	2	0	0	0	1
14:00 – 14:14	0	18	0	0	1	0	17	2	1	0	0	0
14:15 – 14:29	2	21	0	0	3	0	18	2	1	1	0	0
14:30 – 14:44	1	9	0	1	4	0	20	1	1	0	0	0
14:45 – 14:59	0	15	0	0	4	0	23	5	2	0	0	1
15:00 – 15:14	1	18	0	0	1	0	18	6	0	0	0	0
15:15 – 15:29	1	20	0	2	0	0	18	2	0	0	0	1
15:30 – 15:44	0	29	0	0	4	0	25	0	0	0	0	0
15:45 – 15:59	0	19	0	1	7	0	24	4	0	0	0	0
16:00 – 16:14	1	24	0	0	3	0	28	6	1	0	0	0
16:15 – 16:29	0	19	0	0	2	0	12	3	0	0	0	1
16:30 – 16:44	0	20	0	0	1	0	22	1	1	1	0	1
16:45 – 16:59	0	25	0	0	4	0	20	7	1	0	0	0
17:00 – 17:14	0	19	0	0	3	0	29	3	1	0	0	1
17:15 – 17:29	1	35	0	0	4	0	23	5	0	0	1	0
17:30 – 17:44	1	22	0	0	3	0	19	2	0	0	0	1
17:45 – 17:59	1	38	1	1	3	0	27	5	1	0	0	0
18:00 – 18:14	0	34	0	1	2	0	32	2	0	0	0	0
18:15 – 18:29	0	11	0	0	6	0	25	2	0	0	0	2
18:30 – 18:44	0	18	0	0	0	0	14	1	0	0	0	0
18:45 – 18:59	0	26	0	0	4	0	14	3	0	0	0	0

HGV/PSV	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
07:00 – 07:14	0	0	0	0	0	0	2	0	0	0	0	0
07:15 – 07:29	0	2	0	0	0	0	2	0	0	0	0	0
07:30 – 07:44	0	6	0	0	0	0	2	0	0	0	0	0
07:45 – 07:59	0	3	0	0	0	0	3	0	0	0	0	0
08:00 – 08:14	0	1	0	0	0	0	3	0	0	0	0	0
08:15 – 08:29	0	4	0	0	0	0	1	0	0	0	0	0
08:30 – 08:44	0	4	0	0	0	0	2	0	0	0	0	0
08:45 – 08:59	0	3	0	0	0	0	1	0	0	0	0	0
09:00 – 09:14	0	1	0	0	0	0	0	0	0	0	0	0
09:15 – 09:29	0	7	0	0	0	0	1	0	0	0	0	0
09:30 – 09:44	0	2	0	0	0	0	2	0	0	0	0	0
09:45 – 09:59	0	1	0	0	0	0	1	0	0	0	0	0
10:00 – 10:14	0	5	0	0	0	0	2	0	0	0	0	0
10:15 – 10:29	0	1	0	0	1	0	4	0	1	0	0	0
10:30 – 10:44	0	2	0	0	0	0	4	1	0	0	0	1
10:45 – 10:59	0	1	0	0	0	0	1	0	0	0	0	0
11:00 – 11:14	0	3	0	0	1	0	1	0	0	0	0	0
11:15 – 11:29	0	4	0	0	0	0	3	0	0	0	0	0
11:30 – 11:44	0	2	0	0	0	0	3	0	0	0	0	0
11:45 – 11:59	0	2	0	0	0	0	2	0	0	0	0	0
12:00 – 12:14	0	0	0	0	0	0	5	0	0	0	0	0
12:15 – 12:29	0	3	0	0	0	0	4	1	0	0	0	0
12:30 – 12:44	0	0	0	0	0	0	1	0	0	0	0	0
12:45 – 12:59	0	1	0	0	0	0	4	0	0	0	0	0
13:00 – 13:14	0	1	0	0	0	0	2	0	0	0	0	0
13:15 – 13:29	0	1	0	0	0	0	1	0	0	0	0	0
13:30 – 13:44	0	1	0	0	0	0	1	0	1	0	0	1
13:45 – 13:59	0	3	0	0	0	0	4	0	0	0	0	0
14:00 – 14:14	0	1	0	0	1	0	1	1	0	0	0	0
14:15 – 14:29	0	2	0	0	0	0	3	0	0	0	0	0
14:30 – 14:44	0	1	0	0	0	0	4	0	0	0	0	0
14:45 – 14:59	0	2	0	0	0	0	2	0	0	0	0	0
15:00 – 15:14	0	1	0	0	0	0	1	0	0	0	0	0
15:15 – 15:29	0	2	0	0	0	0	0	0	0	0	0	0
15:30 – 15:44	0	5	0	0	0	0	1	0	0	0	0	0
15:45 – 15:59	0	2	0	0	0	0	5	0	0	0	0	0
16:00 – 16:14	0	1	0	0	0	0	2	0	0	0	0	0
16:15 – 16:29	0	1	0	0	0	0	3	0	0	0	0	0
16:30 – 16:44	0	0	0	0	0	0	3	0	0	0	0	0
16:45 – 16:59	0	3	0	0	0	0	1	0	0	0	0	0
17:00 – 17:14	0	0	0	0	1	0	2	0	1	0	1	0
17:15 – 17:29	0	2	0	0	0	0	5	0	0	0	0	0
17:30 – 17:44	0	1	0	0	0	0	2	0	0	0	0	0
17:45 – 17:59	0	0	0	0	0	0	2	0	0	0	0	0
18:00 – 18:14	0	1	0	0	0	0	5	0	0	0	0	0
18:15 – 18:29	0	1	0	0	0	0	3	0	0	0	0	0
18:30 – 18:44	0	0	0	0	0	0	1	0	0	0	0	0
18:45 – 18:59	0	2	0	0	0	0	0	0	0	0	0	0

Total Vehicles	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
07:00 – 07:14	1	8	0	0	3	0	13	0	0	0	0	0
07:15 – 07:29	0	18	0	0	1	0	17	0	0	0	0	0
07:30 – 07:44	0	15	0	0	1	0	13	1	0	0	0	0
07:45 – 07:59	0	12	0	0	3	0	18	2	0	0	0	0
08:00 – 08:14	0	17	0	3	0	0	27	1	0	0	0	0
08:15 – 08:29	0	21	0	0	1	0	17	0	1	0	0	0
08:30 – 08:44	0	22	0	0	4	0	30	1	0	0	0	1
08:45 – 08:59	2	30	0	0	3	0	33	2	0	0	0	0
09:00 – 09:14	1	21	0	0	2	0	23	1	1	0	0	0
09:15 – 09:29	0	29	0	0	2	1	19	0	0	0	0	0
09:30 – 09:44	0	20	0	0	4	0	24	2	0	0	0	2
09:45 – 09:59	0	10	1	1	1	0	13	1	0	0	0	0
10:00 – 10:14	0	21	0	0	1	0	10	1	0	0	0	0
10:15 – 10:29	1	21	1	0	2	0	14	2	2	0	0	0
10:30 – 10:44	0	14	0	0	3	1	18	3	2	1	0	2
10:45 – 10:59	0	19	1	0	2	0	12	1	0	0	0	1
11:00 – 11:14	0	25	1	0	3	0	19	3	0	1	0	1
11:15 – 11:29	0	34	0	0	3	0	19	1	1	0	0	0
11:30 – 11:44	0	14	1	0	1	0	16	2	2	0	0	1
11:45 – 11:59	2	26	1	0	2	0	20	5	0	1	0	3
12:00 – 12:14	0	10	0	0	3	0	21	0	2	1	0	0
12:15 – 12:29	0	16	0	0	2	0	18	2	1	0	0	0
12:30 – 12:44	0	10	0	1	2	0	13	5	2	0	0	2
12:45 – 12:59	0	19	1	0	4	0	21	4	2	0	0	2
13:00 – 13:14	3	12	0	0	2	0	20	2	1	1	0	1
13:15 – 13:29	0	14	0	0	3	0	12	3	0	0	0	0
13:30 – 13:44	0	18	0	0	3	0	25	1	1	0	0	3
13:45 – 13:59	0	18	0	2	1	0	16	2	0	0	0	1
14:00 – 14:14	0	19	0	0	2	0	18	3	1	0	0	0
14:15 – 14:29	2	23	0	0	3	0	21	2	1	1	0	0
14:30 – 14:44	1	10	0	1	4	0	24	1	1	0	0	0
14:45 – 14:59	0	17	0	0	4	0	25	5	2	0	0	1
15:00 – 15:14	1	19	0	0	1	0	19	6	0	0	0	0
15:15 – 15:29	1	22	0	2	0	0	18	2	0	0	0	1
15:30 – 15:44	0	34	0	0	4	0	26	0	0	0	0	0
15:45 – 15:59	0	21	0	1	7	0	29	4	0	0	0	0
16:00 – 16:14	1	25	0	0	3	0	30	6	1	0	0	0
16:15 – 16:29	0	20	0	0	2	0	15	3	0	0	0	1
16:30 – 16:44	0	20	0	0	1	0	25	1	1	1	0	1
16:45 – 16:59	0	28	0	0	4	0	21	7	1	0	0	0
17:00 – 17:14	0	19	0	0	4	0	31	3	2	0	1	1
17:15 – 17:29	1	37	0	0	4	0	28	5	0	0	1	0
17:30 – 17:44	1	23	0	0	3	0	21	2	0	0	0	1
17:45 – 17:59	1	38	1	1	3	0	29	5	1	0	0	0
18:00 – 18:14	0	35	0	1	2	0	37	2	0	0	0	0
18:15 – 18:29	0	12	0	0	6	0	28	2	0	0	0	2
18:30 – 18:44	0	18	0	0	0	0	15	1	0	0	0	0
18:45 – 18:59	0	28	0	0	4	0	14	3	0	0	0	0

PCUs	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
07:00 – 07:14	1	8	0	0	3	0	16	0	0	0	0	0
07:15 – 07:29	0	21	0	0	1	0	20	0	0	0	0	0
07:30 – 07:44	0	23	0	0	1	0	16	1	0	0	0	0
07:45 – 07:59	0	16	0	0	3	0	22	2	0	0	0	0
08:00 – 08:14	0	18	0	3	0	0	31	1	0	0	0	0
08:15 – 08:29	0	26	0	0	1	0	18	0	1	0	0	0
08:30 – 08:44	0	27	0	0	4	0	33	1	0	0	0	1
08:45 – 08:59	2	34	0	0	3	0	34	2	0	0	0	0
09:00 – 09:14	1	22	0	0	2	0	23	1	1	0	0	0
09:15 – 09:29	0	38	0	0	2	1	20	0	0	0	0	0
09:30 – 09:44	0	23	0	0	4	0	27	2	0	0	0	2
09:45 – 09:59	0	11	1	1	1	0	14	1	0	0	0	0
10:00 – 10:14	0	28	0	0	1	0	13	1	0	0	0	0
10:15 – 10:29	1	22	1	0	3	0	19	2	3	0	0	0
10:30 – 10:44	0	17	0	0	3	1	23	4	2	1	0	3
10:45 – 10:59	0	20	1	0	2	0	13	1	0	0	0	1
11:00 – 11:14	0	29	1	0	4	0	20	3	0	1	0	1
11:15 – 11:29	0	39	0	0	3	0	23	1	1	0	0	0
11:30 – 11:44	0	17	1	0	1	0	20	2	2	0	0	1
11:45 – 11:59	2	29	1	0	2	0	23	5	0	1	0	3
12:00 – 12:14	0	10	0	0	3	0	28	0	2	1	0	0
12:15 – 12:29	0	19	0	0	2	0	23	3	1	0	0	0
12:30 – 12:44	0	10	0	1	2	0	14	5	2	0	0	2
12:45 – 12:59	0	20	1	0	4	0	25	4	2	0	0	2
13:00 – 13:14	3	13	0	0	2	0	23	2	1	1	0	1
13:15 – 13:29	0	15	0	0	3	0	13	3	0	0	0	0
13:30 – 13:44	0	19	0	0	3	0	26	1	2	0	0	4
13:45 – 13:59	0	22	0	2	1	0	21	2	0	0	0	1
14:00 – 14:14	0	20	0	0	3	0	19	4	1	0	0	0
14:15 – 14:29	2	26	0	0	3	0	25	2	1	1	0	0
14:30 – 14:44	1	11	0	1	4	0	29	1	1	0	0	0
14:45 – 14:59	0	20	0	0	4	0	28	5	2	0	0	1
15:00 – 15:14	1	20	0	0	1	0	20	6	0	0	0	0
15:15 – 15:29	1	25	0	2	0	0	18	2	0	0	0	1
15:30 – 15:44	0	41	0	0	4	0	27	0	0	0	0	0
15:45 – 15:59	0	24	0	1	7	0	36	4	0	0	0	0
16:00 – 16:14	1	26	0	0	3	0	33	6	1	0	0	0
16:15 – 16:29	0	21	0	0	2	0	19	3	0	0	0	1
16:30 – 16:44	0	20	0	0	1	0	29	1	1	1	0	1
16:45 – 16:59	0	32	0	0	4	0	22	7	1	0	0	0
17:00 – 17:14	0	19	0	0	5	0	34	3	3	0	2	1
17:15 – 17:29	1	40	0	0	4	0	35	5	0	0	1	0
17:30 – 17:44	1	24	0	0	3	0	24	2	0	0	0	1
17:45 – 17:59	1	38	1	1	3	0	32	5	1	0	0	0
18:00 – 18:14	0	36	0	1	2	0	44	2	0	0	0	0
18:15 – 18:29	0	13	0	0	6	0	32	2	0	0	0	2
18:30 – 18:44	0	18	0	0	0	0	16	1	0	0	0	0
18:45 – 18:59	0	31	0	0	4	0	14	3	0	0	0	0

PCUs	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
AM Peak Hour	3	122	0	0	11	1	110	4	1	0	0	1
PM Peak Hour	3	138	1	2	12	0	133	14	1	0	1	1
12 Hour	19	1101	8	13	128	2	1135	115	33	7	3	31

Appendix C

Traffic Calculations Summary

Traffic Calculations Summary

R199/Lahard/Trathnona Estate junction, Ballinamore, Co. Leitrim

Arm A – R199 to/from east

Arm B – Lahard to/from development

Arm C – R199 to/from west

Arm D – Trathnona Estate

Scenario	A-B	A-C	A-D	B-A	B-C	B-D	C-A	C-B	C-D	D-A	D-B	D-C
2020 AM Peak Hour (08:30-09:29)	3	122	0	0	11	1	110	4	1	0	0	1
2021 AM Peak Hour (Opening Year) Factor 1.010	**3**	**123**	**0**	**0**	**11**	**1**	**111**	**4**	**1**	**0**	**0**	**1**
2026 AM Peak Hour (Opening Year+5) Factor 1.063	**3**	**129**	**0**	**0**	**12**	**1**	**117**	**4**	**1**	**0**	**0**	**1**
2036 AM Peak Hour (Opening Year+15) Factor 1.086	**3**	**132**	**0**	**0**	**12**	**1**	**120**	**4**	**1**	**0**	**0**	**1**
AM Peak Hour Development Related Trips	4	0	0	0	8	1	0	5	0	0	0	0
2021 AM Peak Hour With Development	**7**	**123**	**0**	**0**	**19**	**2**	**111**	**9**	**1**	**0**	**0**	**1**
2026 AM Peak Hour With Development	**7**	**129**	**0**	**0**	**19**	**2**	**117**	**9**	**1**	**0**	**0**	**1**
2036 AM Peak Hour With Development	**7**	**132**	**0**	**0**	**20**	**2**	**120**	**9**	**1**	**0**	**0**	**1**

2020 PM Peak Hour (17:15-18:14)	3	138	1	2	12	0	133	14	1	0	1	1
2021 PM Peak Hour (Opening Year) Factor 1.010	**3**	**140**	**1**	**2**	**12**	**0**	**135**	**14**	**1**	**0**	**1**	**1**
2026 PM Peak Hour (Opening Year+5) Factor 1.063	**3**	**147**	**1**	**2**	**13**	**0**	**142**	**15**	**1**	**0**	**1**	**1**
2036 PM Peak Hour (Opening Year+15) Factor 1.086	**3**	**150**	**1**	**2**	**13**	**0**	**145**	**15**	**1**	**0**	**1**	**1**
PM Peak Hour Development Related Trips	1	0	0	1	7	0	0	7	0	0	0	0
2021 PM Peak Hour With Development	**4**	**140**	**1**	**3**	**19**	**0**	**135**	**21**	**1**	**0**	**1**	**1**
2026 PM Peak Hour With Development	**5**	**147**	**1**	**3**	**20**	**0**	**142**	**21**	**1**	**0**	**2**	**1**
2036 PM Peak Hour With Development	**5**	**150**	**1**	**3**	**20**	**0**	**145**	**22**	**1**	**0**	**2**	**1**

All Data in PCUs rounded to the nearest whole number

Appendix D

PICADY Modelling Output File

PICADY

GUI Version: 5.00 AC
Analysis Program Release: 3.0

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	D:\..\ballinamore\r199_lahard.vpi
Date Run	08 July 2020
Time Run	14:00:29
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	R199 to/from East	100
Arm B	Lahard to/from Development	100
Arm C	R199 to/from Town Centre	100
Arm D	Trathnona Estate	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	R199 / Lahard Junction
Location	Ballinamore, Leitrim
Date	08 July 2020
Enumerator	TTRSA
Job Number	191104
Status	Traffic Report
Client	WGG Architects
Description	-

Geometric Data

Geometric Parameters

Parameter	Minor Arm B	Minor Arm D
Major Road Carriageway Width (m)	6.00	6.00
Major Road Kerbed Central Reserve Width (m)	0.00	0.00
Major Road Right Turning Lane Width (m)	2.60	2.60
Minor Road First Lane Width (m)	2.75	2.50
Minor Road Visibility To Right (m)	20	24
Minor Road Visibility To Left (m)	19	19
Major Road Right Turn Visibility (m)	95	100
Major Road Right Turn Blocks Traffic	Yes	Yes

Slope and Intercept Values

Stream	Intercept for Stream B-C	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
B-C	620.595	0.088	0.222	-	-	-	-	-	-	0.088	0.222
B-AD	481.247	0.095	0.240	-	-	-	0.139	0.317	0.139	0.095	0.240
D-A	607.056	0.093	-	-	-	-	0.235	-	-	0.093	0.235
D-BC	481.247	0.136	0.136	0.310	0.217	0.086	0.217	-	0.086	-	-
C-B	656.360	0.254	0.254	-	-	-	-	-	-	0.254	0.254
A-D	656.360	-	-	-	0.255	0.255	0.255	-	0.255	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	08:15-09:45	90	15
Second Modelling Period	17:00-18:30	90	15

ODTAB Turning Counts

Demand Set: 2021 AM Peak Without Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	3.0	123.0	0.0
Arm B	0.0	0.0	11.0	1.0
Arm C	111.0	4.0	0.0	1.0
Arm D	0.0	0.0	1.0	0.0

Demand Set: 2026 AM Peak Without Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	3.0	129.0	0.0
Arm B	0.0	0.0	12.0	1.0
Arm C	117.0	4.0	0.0	1.0
Arm D	0.0	0.0	1.0	0.0

Demand Set: 2036 AM Peak Without Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	3.0	132.0	0.0
Arm B	0.0	0.0	12.0	1.0
Arm C	120.0	4.0	0.0	1.0
Arm D	0.0	0.0	1.0	0.0

Demand Set: 2021 AM Peak With Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	7.0	123.0	0.0
Arm B	0.0	0.0	19.0	2.0
Arm C	111.0	9.0	0.0	1.0
Arm D	0.0	0.0	1.0	0.0

Demand Set: 2026 AM Peak With Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	7.0	129.0	0.0
Arm B	0.0	0.0	19.0	2.0
Arm C	117.0	9.0	0.0	1.0
Arm D	0.0	0.0	1.0	0.0

Demand Set: 2036 AM Peak With Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	7.0	132.0	0.0
Arm B	0.0	0.0	20.0	2.0
Arm C	120.0	9.0	0.0	1.0
Arm D	0.0	0.0	1.0	0.0

Demand Set: 2021 PM Peak Without Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	3.0	140.0	1.0
Arm B	2.0	0.0	12.0	0.0
Arm C	135.0	14.0	0.0	1.0
Arm D	0.0	1.0	1.0	0.0

Demand Set: 2026 PM Peak Without Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	3.0	147.0	1.0
Arm B	2.0	0.0	13.0	0.0
Arm C	142.0	15.0	0.0	1.0
Arm D	0.0	1.0	1.0	0.0

Demand Set: 2036 PM Peak Without Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	3.0	150.0	1.0
Arm B	2.0	0.0	13.0	0.0
Arm C	145.0	15.0	0.0	1.0
Arm D	0.0	1.0	1.0	0.0

Demand Set: 2021 PM Peak With Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	4.0	140.0	1.0
Arm B	3.0	0.0	19.0	0.0
Arm C	135.0	21.0	0.0	1.0
Arm D	0.0	1.0	1.0	0.0

Demand Set: 2026 PM Peak With Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	5.0	147.0	1.0
Arm B	3.0	0.0	20.0	0.0
Arm C	142.0	21.0	0.0	1.0
Arm D	0.0	2.0	1.0	0.0

Demand Set: 2036 PM Peak With Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	5.0	150.0	1.0
Arm B	3.0	0.0	20.0	0.0
Arm C	145.0	22.0	0.0	1.0
Arm D	0.0	2.0	1.0	0.0

ODTAB Synthesised Flows

Demand Set: 2021 AM Peak Without Development
Modelling Period: 08:15-09:45

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:30	1.575	08:30	2.363	09:00	1.575
Arm B	08:30	0.150	08:30	0.225	09:00	0.150
Arm C	08:30	1.450	08:30	2.175	09:00	1.450
Arm D	08:30	0.013	08:30	0.019	09:00	0.013

Heavy Vehicles Percentages

Demand Set: 2021 AM Peak Without Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2026 AM Peak Without Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2036 AM Peak Without Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2021 AM Peak With Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2026 AM Peak With Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2036 AM Peak With Development
Modelling Period: 08:15-09:45

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2021 PM Peak Without Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2026 PM Peak Without Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2036 PM Peak Without Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2021 PM Peak With Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2026 PM Peak With Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Demand Set: 2036 PM Peak With Development
Modelling Period: 17:00-18:30

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	0.0	0.0	0.0
Arm B	0.0	-	0.0	0.0
Arm C	0.0	0.0	-	0.0
Arm D	0.0	0.0	0.0	-

Queues & Delays

Demand Set: 2021 AM Peak Without Development
Modelling Period: 08:15-09:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-ACD	0.15	9.69	0.016	-	0.00	0.02	-	0.2	0.10
	D-ABC	0.01	7.33	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.05	10.53	0.005	-	0.00	0.00	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.66	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-ACD	0.18	9.62	0.019	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.01	7.23	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.06	10.46	0.006	-	0.00	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.60	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-ACD	0.22	9.51	0.023	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.02	7.09	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.07	10.35	0.007	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.51	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-ACD	0.22	9.51	0.023	-	0.02	0.02	-	0.4	0.11
	D-ABC	0.02	7.09	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.07	10.35	0.007	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.51	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-ACD	0.18	9.62	0.019	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.01	7.23	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.06	10.46	0.006	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.60	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:30-09:45	B-ACD	0.15	9.69	0.016	-	0.02	0.02	-	0.2	0.10
	D-ABC	0.01	7.33	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.05	10.53	0.005	-	0.01	0.00	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.66	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2026 AM Peak Without Development
Modelling Period: 08:15-09:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-ACD	0.16	9.70	0.017	-	0.00	0.02	-	0.2	0.10
	D-ABC	0.01	7.30	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.05	10.51	0.005	-	0.00	0.00	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.64	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-ACD	0.19	9.61	0.020	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.01	7.19	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.06	10.43	0.006	-	0.00	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.58	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-ACD	0.24	9.50	0.025	-	0.02	0.03	-	0.4	0.11
	D-ABC	0.02	7.05	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.07	10.32	0.007	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.48	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-ACD	0.24	9.50	0.025	-	0.03	0.03	-	0.4	0.11
	D-ABC	0.02	7.05	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.07	10.32	0.007	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.48	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-ACD	0.19	9.61	0.020	-	0.03	0.02	-	0.3	0.11
	D-ABC	0.01	7.19	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.06	10.43	0.006	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.58	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:30-09:45	B-ACD	0.16	9.70	0.017	-	0.02	0.02	-	0.3	0.10
	D-ABC	0.01	7.30	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.05	10.51	0.005	-	0.01	0.00	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.64	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2036 AM Peak Without Development
Modelling Period: 08:15-09:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-ACD	0.16	9.69	0.017	-	0.00	0.02	-	0.2	0.10
	D-ABC	0.01	7.29	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.05	10.51	0.005	-	0.00	0.00	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.64	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-ACD	0.19	9.60	0.020	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.01	7.18	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.06	10.42	0.006	-	0.00	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.57	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-ACD	0.24	9.48	0.025	-	0.02	0.03	-	0.4	0.11
	D-ABC	0.02	7.03	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.07	10.30	0.007	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.47	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-ACD	0.24	9.48	0.025	-	0.03	0.03	-	0.4	0.11
	D-ABC	0.02	7.03	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.07	10.30	0.007	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.47	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-ACD	0.19	9.60	0.020	-	0.03	0.02	-	0.3	0.11
	D-ABC	0.01	7.18	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.06	10.42	0.006	-	0.01	0.01	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.57	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:30-09:45	B-ACD	0.16	9.69	0.017	-	0.02	0.02	-	0.3	0.10
	D-ABC	0.01	7.29	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.05	10.51	0.005	-	0.01	0.00	-	0.1	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.64	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2021 AM Peak With Development
Modelling Period: 08:15-09:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-ACD	0.26	9.65	0.027	-	0.00	0.03	-	0.4	0.11
	D-ABC	0.01	7.32	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.11	10.52	0.011	-	0.00	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.66	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-ACD	0.31	9.57	0.033	-	0.03	0.03	-	0.5	0.11
	D-ABC	0.01	7.22	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.13	10.44	0.013	-	0.01	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.59	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-ACD	0.39	9.45	0.041	-	0.03	0.04	-	0.6	0.11
	D-ABC	0.02	7.07	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.17	10.33	0.016	-	0.01	0.02	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.50	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-ACD	0.39	9.45	0.041	-	0.04	0.04	-	0.6	0.11
	D-ABC	0.02	7.07	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.17	10.33	0.016	-	0.02	0.02	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.50	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-ACD	0.31	9.57	0.033	-	0.04	0.03	-	0.5	0.11
	D-ABC	0.01	7.22	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.13	10.44	0.013	-	0.02	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.59	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:30-09:45	B-ACD	0.26	9.65	0.027	-	0.03	0.03	-	0.4	0.11
	D-ABC	0.01	7.32	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.11	10.52	0.011	-	0.01	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.66	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2026 AM Peak With Development
Modelling Period: 08:15-09:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-ACD	0.26	9.63	0.027	-	0.00	0.03	-	0.4	0.11
	D-ABC	0.01	7.29	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.11	10.50	0.011	-	0.00	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.64	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-ACD	0.31	9.54	0.033	-	0.03	0.03	-	0.5	0.11
	D-ABC	0.01	7.18	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.13	10.42	0.013	-	0.01	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.57	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-ACD	0.39	9.43	0.041	-	0.03	0.04	-	0.6	0.11
	D-ABC	0.02	7.04	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.17	10.30	0.016	-	0.01	0.02	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.48	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-ACD	0.39	9.43	0.041	-	0.04	0.04	-	0.6	0.11
	D-ABC	0.02	7.04	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.17	10.30	0.016	-	0.02	0.02	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.48	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-ACD	0.31	9.54	0.033	-	0.04	0.03	-	0.5	0.11
	D-ABC	0.01	7.18	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.13	10.42	0.013	-	0.02	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.57	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:30-09:45	B-ACD	0.26	9.63	0.027	-	0.03	0.03	-	0.4	0.11
	D-ABC	0.01	7.29	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.11	10.50	0.011	-	0.01	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.64	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2036 AM Peak With Development
Modelling Period: 08:15-09:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-ACD	0.28	9.63	0.029	-	0.00	0.03	-	0.4	0.11
	D-ABC	0.01	7.28	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.11	10.49	0.011	-	0.00	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.63	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-ACD	0.33	9.55	0.035	-	0.03	0.04	-	0.5	0.11
	D-ABC	0.01	7.17	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.13	10.41	0.013	-	0.01	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.56	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-ACD	0.40	9.43	0.043	-	0.04	0.04	-	0.7	0.11
	D-ABC	0.02	7.02	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.17	10.29	0.016	-	0.01	0.02	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.47	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-ACD	0.40	9.43	0.043	-	0.04	0.04	-	0.7	0.11
	D-ABC	0.02	7.02	0.003	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.17	10.29	0.016	-	0.02	0.02	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.47	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-ACD	0.33	9.55	0.035	-	0.04	0.04	-	0.6	0.11
	D-ABC	0.01	7.17	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.13	10.41	0.013	-	0.02	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.56	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:30-09:45	B-ACD	0.28	9.63	0.029	-	0.04	0.03	-	0.5	0.11
	D-ABC	0.01	7.28	0.002	-	0.00	0.00	-	0.0	0.14
	C-ABD	0.11	10.49	0.011	-	0.01	0.01	-	0.2	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.00	9.63	0.000	-	0.00	0.00	-	0.0	0.00
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2021 PM Peak Without Development
Modelling Period: 17:00-18:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-ACD	0.18	9.44	0.019	-	0.00	0.02	-	0.3	0.11
	D-ABC	0.03	7.22	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.18	10.48	0.017	-	0.00	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.55	0.001	-	0.00	0.00	-	0.0	0.09
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-ACD	0.21	9.34	0.022	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.03	7.10	0.004	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.21	10.39	0.020	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.46	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-ACD	0.26	9.21	0.028	-	0.02	0.03	-	0.4	0.11
	D-ABC	0.04	6.94	0.005	-	0.00	0.01	-	0.1	0.14
	C-ABD	0.26	10.26	0.025	-	0.02	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.34	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-ACD	0.26	9.21	0.028	-	0.03	0.03	-	0.4	0.11
	D-ABC	0.04	6.94	0.005	-	0.01	0.01	-	0.1	0.14
	C-ABD	0.26	10.26	0.025	-	0.03	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.34	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-ACD	0.21	9.34	0.022	-	0.03	0.02	-	0.4	0.11
	D-ABC	0.03	7.10	0.004	-	0.01	0.00	-	0.1	0.14
	C-ABD	0.21	10.39	0.020	-	0.03	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.46	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:15-18:30	B-ACD	0.18	9.44	0.019	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.03	7.22	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.18	10.48	0.017	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.55	0.001	-	0.00	0.00	-	0.0	0.09
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2026 PM Peak Without Development
Modelling Period: 17:00-18:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-ACD	0.19	9.44	0.020	-	0.00	0.02	-	0.3	0.11
	D-ABC	0.03	7.19	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.19	10.45	0.018	-	0.00	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.52	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-ACD	0.22	9.34	0.024	-	0.02	0.02	-	0.4	0.11
	D-ABC	0.03	7.07	0.004	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.22	10.36	0.022	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.43	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-ACD	0.28	9.20	0.030	-	0.02	0.03	-	0.5	0.11
	D-ABC	0.04	6.89	0.005	-	0.00	0.01	-	0.1	0.15
	C-ABD	0.28	10.23	0.027	-	0.02	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.31	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-ACD	0.28	9.20	0.030	-	0.03	0.03	-	0.5	0.11
	D-ABC	0.04	6.89	0.005	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.28	10.23	0.027	-	0.03	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.31	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-ACD	0.22	9.34	0.024	-	0.03	0.02	-	0.4	0.11
	D-ABC	0.03	7.07	0.004	-	0.01	0.00	-	0.1	0.14
	C-ABD	0.22	10.36	0.022	-	0.03	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.43	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:15-18:30	B-ACD	0.19	9.44	0.020	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.03	7.19	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.19	10.45	0.018	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.52	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2036 PM Peak Without Development
Modelling Period: 17:00-18:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-ACD	0.19	9.43	0.020	-	0.00	0.02	-	0.3	0.11
	D-ABC	0.03	7.18	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.19	10.44	0.018	-	0.00	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.52	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-ACD	0.22	9.33	0.024	-	0.02	0.02	-	0.4	0.11
	D-ABC	0.03	7.05	0.004	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.22	10.35	0.022	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.42	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-ACD	0.28	9.19	0.030	-	0.02	0.03	-	0.5	0.11
	D-ABC	0.04	6.87	0.005	-	0.00	0.01	-	0.1	0.15
	C-ABD	0.28	10.22	0.027	-	0.02	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.30	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-ACD	0.28	9.19	0.030	-	0.03	0.03	-	0.5	0.11
	D-ABC	0.04	6.87	0.005	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.28	10.22	0.027	-	0.03	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.30	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-ACD	0.22	9.33	0.024	-	0.03	0.02	-	0.4	0.11
	D-ABC	0.03	7.05	0.004	-	0.01	0.00	-	0.1	0.14
	C-ABD	0.22	10.35	0.022	-	0.03	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.42	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:15-18:30	B-ACD	0.19	9.43	0.020	-	0.02	0.02	-	0.3	0.11
	D-ABC	0.03	7.18	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.19	10.44	0.018	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.52	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2021 PM Peak With Development
Modelling Period: 17:00-18:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-ACD	0.28	9.45	0.029	-	0.00	0.03	-	0.4	0.11
	D-ABC	0.03	7.22	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.26	10.47	0.025	-	0.00	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.54	0.001	-	0.00	0.00	-	0.0	0.09
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-ACD	0.33	9.35	0.035	-	0.03	0.04	-	0.5	0.11
	D-ABC	0.03	7.10	0.004	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.31	10.38	0.030	-	0.03	0.03	-	0.5	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.46	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-ACD	0.40	9.22	0.044	-	0.04	0.05	-	0.7	0.11
	D-ABC	0.04	6.93	0.005	-	0.00	0.01	-	0.1	0.15
	C-ABD	0.39	10.26	0.038	-	0.03	0.04	-	0.6	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.34	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-ACD	0.40	9.22	0.044	-	0.05	0.05	-	0.7	0.11
	D-ABC	0.04	6.93	0.005	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.39	10.26	0.038	-	0.04	0.04	-	0.6	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.34	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-ACD	0.33	9.35	0.035	-	0.05	0.04	-	0.6	0.11
	D-ABC	0.03	7.10	0.004	-	0.01	0.00	-	0.1	0.14
	C-ABD	0.31	10.38	0.030	-	0.04	0.03	-	0.5	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.46	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:15-18:30	B-ACD	0.28	9.45	0.029	-	0.04	0.03	-	0.5	0.11
	D-ABC	0.03	7.22	0.003	-	0.00	0.00	-	0.1	0.14
	C-ABD	0.26	10.47	0.025	-	0.03	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.54	0.001	-	0.00	0.00	-	0.0	0.09
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2026 PM Peak With Development
Modelling Period: 17:00-18:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-ACD	0.29	9.44	0.031	-	0.00	0.03	-	0.5	0.11
	D-ABC	0.04	7.19	0.005	-	0.00	0.01	-	0.1	0.14
	C-ABD	0.26	10.44	0.025	-	0.00	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.52	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-ACD	0.34	9.34	0.037	-	0.03	0.04	-	0.6	0.11
	D-ABC	0.04	7.06	0.006	-	0.01	0.01	-	0.1	0.14
	C-ABD	0.31	10.35	0.030	-	0.03	0.03	-	0.5	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.43	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-ACD	0.42	9.20	0.046	-	0.04	0.05	-	0.7	0.11
	D-ABC	0.06	6.88	0.008	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.39	10.22	0.038	-	0.03	0.04	-	0.6	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.31	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-ACD	0.42	9.20	0.046	-	0.05	0.05	-	0.7	0.11
	D-ABC	0.06	6.88	0.008	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.39	10.22	0.038	-	0.04	0.04	-	0.6	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.31	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-ACD	0.34	9.34	0.037	-	0.05	0.04	-	0.6	0.11
	D-ABC	0.04	7.06	0.006	-	0.01	0.01	-	0.1	0.14
	C-ABD	0.31	10.35	0.030	-	0.04	0.03	-	0.5	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.43	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:15-18:30	B-ACD	0.29	9.44	0.031	-	0.04	0.03	-	0.5	0.11
	D-ABC	0.04	7.19	0.005	-	0.01	0.01	-	0.1	0.14
	C-ABD	0.26	10.44	0.025	-	0.03	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.52	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Demand Set: 2036 PM Peak With Development
Modelling Period: 17:00-18:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-ACD	0.29	9.43	0.031	-	0.00	0.03	-	0.5	0.11
	D-ABC	0.04	7.17	0.005	-	0.00	0.01	-	0.1	0.14
	C-ABD	0.28	10.44	0.026	-	0.00	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.51	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-ACD	0.34	9.33	0.037	-	0.03	0.04	-	0.6	0.11
	D-ABC	0.04	7.04	0.006	-	0.01	0.01	-	0.1	0.14
	C-ABD	0.33	10.34	0.032	-	0.03	0.03	-	0.5	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.42	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-ACD	0.42	9.18	0.046	-	0.04	0.05	-	0.7	0.11
	D-ABC	0.06	6.86	0.008	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.40	10.20	0.040	-	0.03	0.04	-	0.6	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.29	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-ACD	0.42	9.18	0.046	-	0.05	0.05	-	0.7	0.11
	D-ABC	0.06	6.86	0.008	-	0.01	0.01	-	0.1	0.15
	C-ABD	0.40	10.20	0.040	-	0.04	0.04	-	0.6	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.02	10.29	0.002	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
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	C-ABD	0.33	10.34	0.032	-	0.04	0.03	-	0.5	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.42	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:15-18:30	B-ACD	0.29	9.43	0.031	-	0.04	0.03	-	0.5	0.11
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	C-ABD	0.28	10.44	0.026	-	0.03	0.03	-	0.4	0.10
	C-A	-	-	-	-	-	-	-	-	-
	C-D	-	-	-	-	-	-	-	-	-
	A-BCD	0.01	10.51	0.001	-	0.00	0.00	-	0.0	0.10
	A-B	-	-	-	-	-	-	-	-	-
	A-C	-	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

PICADY 5 Run Successful