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ATTACHMENT 8.1

- TRANSPORTATION ASSESSMENT REPORT -

consulting engineers

NRB

Transportation Assessment Report

For

Extension to an Existing Abattoir

Adjacent

Boherdurrow Crossroads,

Banagher, Co Offaly.

on behalf of

Banagher Chilling Ltd.,

FINAL ISSUE

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8 Leopardstown Business Centre, Ballyogan Avenue, Leopardstown, Dublin 18
Tel/fax: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

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EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation impact associated with the construction of an extension to an existing abattoir development on an established rural site adjacent Boherdurrow Crossroads south of Banagher, Co Offaly. The development consist of an extension to an existing Abattoir facilitating the processing and production of meat and meat products. The development when fully operational will have in excess of 100 people in direct employment.

We have assessed the impact of the traffic associated with the development, together with the established traffic on the local road network for the AM and the PM Peak Hours. The Transportation Assessment has been prepared in accordance with the TII's Traffic & Transportation Assessment Guidelines and addresses the traffic impact of the proposals.

The assessment is based on comprehensive Weekday AM & Weekday PM Peak classified traffic interval movement surveys of the road network carried out in November 2018, together with automated tube count survey at the site. The Report & analysis includes an assessment of impact of the development traffic during the projected Opening Year 2021 together with an assessment of the Design Year 2036.

The Report addresses the adequacy of the existing road network to safely and appropriately accommodate the worst case peak hour vehicular demands associated with the development and in particular the safety and capacity of the proposed vehicular access junction onto the Local Road along with an assessment of the impact on Boherdurrow crossroads. An assessment and quantification of the 24 Hour AADT Traffic on local roads and links is also included.

We have assessed the proposed vehicular access in terms of design, sightlines, and adherence to appropriate Design Guidelines, with drawings included herein as ***Appendix A***.

The Transportation Assessment Report confirms that there is a very small change in hourly or daily traffic conditions associated with the proposed facility and that the local road network can easily accommodate the traffic generated. The assessment confirms that the proposed Access Junction and the adjacent established road junctions will operate without any issues arising during the selected year of opening and the Design Year 15 years after opening.

Based on our study, we believe that there are no traffic/transportation capacity, traffic safety or operational issues associated with the proposed development, accessed from the local road L3010, that would prevent a positive determination of a planning application by Offaly County Council.

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1.0 INTRODUCTION

1.1 This Transportation Assessment (TA) has been prepared by NRB Consulting Engineers Ltd and addresses the traffic capacity considerations relating to the proposal to construct an Abattoir extension adjacent Boherdurrow Crossroads south of Banagher Co Offaly.

1.2 The Report addresses the impact of the proposed development accessed from the Local Road L3010 and the implications for the adjacent road network for the weekday AM and weekday PM Peak Hours (including an assessment of AADT for the circumstances Pre and Post Development).

1.3 A site location plan for the development is included below as ***Figure 1.1***.

Figure 1.1: Site Location Plan in Context of Local Roads

1.4 It is proposed to continue to access the subject site from the L3010 Local Road by way of a simple priority controlled T Junction, illustrated in the drawings included herein as ***Appendix A.*** This form of junction by its very nature minimises any potential impact on the capacity of local road network as priority is afforded to the main road.

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1.5 The layout and design of the access and the junction geometry comply with the requirements of the TIIs Design Manual for Roads and Bridges (Refer to layout plan included herein as ***Appendix A***.)

1.6 In describing the Receiving Environment and the Proposed Future Environment, this report addresses the following aspects of the proposed development:

- Very Small Scale of Development Proposals in vehicular traffic generation terms (conscious that the development constitutes an Abattoir development in a rural area, with full time employment for in excess of 100 staff),
- Continued Access from a Local Road using a simple priority controlled T junction,
- Traffic & Transportation impact,
- Capacity of the proposed access to accommodate the worst-case development traffic flows,
- Impact of the development on the free flow and capacity of the adjacent Local Roads, and
- Detailed Capacity Analysis of the adjacent Boherdurrow Crossroads and the associated spur-T-Junction of the L3010/L7016.

1.7 Recommendations contained within this Transportation Assessment are based on the following sources of information and industry-standard practices:

- Transport Infrastructure Ireland (TII) Traffic & Transport Assessment Guidelines,
- TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3,
- Comprehensive new interval Classified Traffic Surveys undertaken in November 2018 during normal school term,
- The TII Design Standards,
- The Trip Rate Information Computer System (TRICS) as appropriate,
- Details of the Employment and Activities of the site,
- Our experience in assessing the impact of Developments of this Nature, and
- Local knowledge of the site location.

1.8 The Report has been prepared fully in accordance with the requirements of TII's Traffic & Transport Assessment Guidelines. These are the professional Guidelines used to assess the impact of developments on public roads.

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2.0 RECEIVING ENVIRONMENT, DEVELOPMENT PROPOSALS

2.1 The proposed development extension is located on a rural site adjacent Boherdurrow Crossroads to the south of Banagher in Offaly. (Refer to site location as ***Figure 1.1***)

2.2 The site is bounded to the west by the Local Road L3010, a local road connecting to the Regional Road R438 at Boherdurrow Crossroads. The site is currently use for agricultural support purposes and is bound to the north, south and east by agricultural lands.

2.3 The L3010 Local Road serving the site, is a narrow rural road which is subject to an 80kph speed limit. There is also an existing 3T weight limit on the L3010 serving the site. This is illustrated in ***Figure 2.1*** below

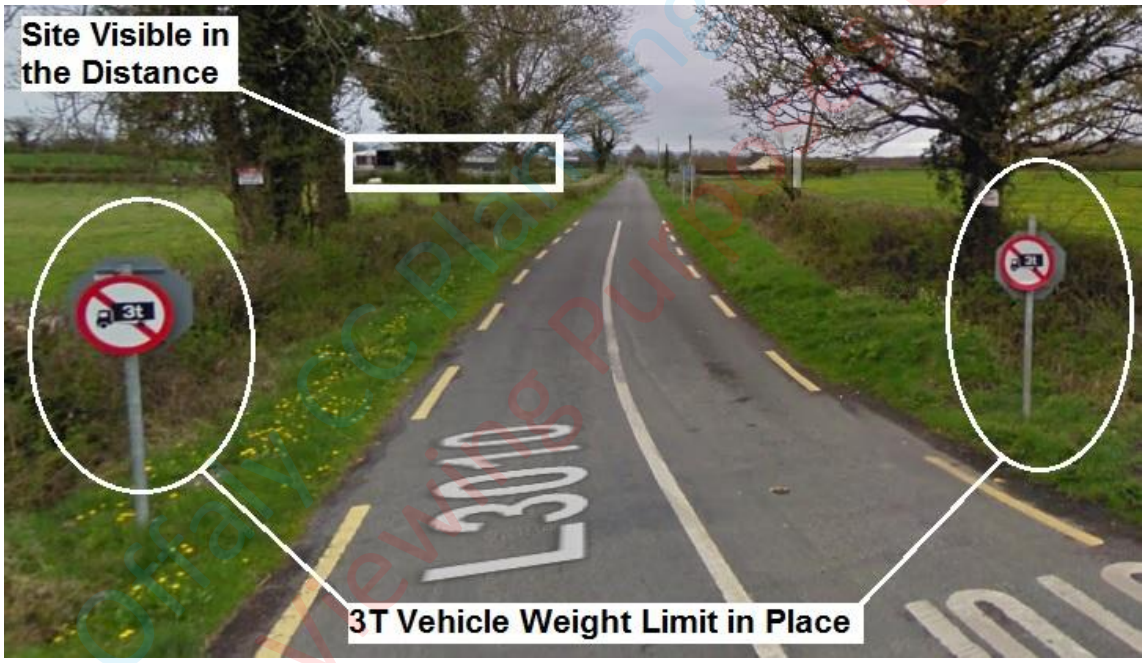

Figure 2.1 - Existing Site and Local Road L3010

2.4 A 3T ban (RUS 015) (for traffic management purposes) does not prevent trucks travelling on a road to reach a business, or vehicles which have business on such a road. Trucks would not be prevented from travelling on it by a 3T ban as per S.I. No. 332/2012 - Road Traffic (Traffic and Parking) (Amendment) (No. 2) Regulations 2012, which states;

> ***"17. (1) Where traffic sign number RUS 015 (maximum design gross vehicle weight — traffic management) is provided at the entrance to a road, the driver of a vehicle, the design gross vehicle weight of which***

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exceeds the weight specified on the sign, shall not proceed beyond the sign.

(2) Sub-article (1) does not apply where it is necessary for a vehicle to enter a road solely for the purpose of gaining access to or egress from premises accessible only from that road."

2.5 In the case of the subject site, it is proposed to supplement the 3T Weight Restriction Advisory Signs to include a sign for "***EXCEPT FOR LOCAL ACCESS***" so that vehicles accessing this site are aware that this access to the premises is allowable. This is shown on the drawings at ***Appendix A***.

2.6 The L3010 currently carries a 24Hr Annual Average Daily Traffic (AADT) of 120 Passenger Car Units (PCUs, or car equivalents) at the site access point. This is therefore currently a very lightly trafficked road. The L3010 meets the R438 Regional Road approximately 200m northwards from the site by way of a priority controlled crossroads junction.

2.7 The R438 Regional Road is relatively flat in nature, is generally orientated in a N-S direction, and facilitates rural traffic to join the N62 approximately 7km Northeast of the site at Cloghan and approximately 9 southeast of the site at Birr. The R438 currently carries a 24Hr Annual Average Daily Traffic (AADT) of approximately 1449 PCUs ijust north of Boherdurrow Crossroads. To set this flow in context, a road of this nature has a traffic carrying capacity of approximately 1,000 PCUs per-direction per-hour. Given the hourly 2-way link capacity is approximately 2,000 PCUs and the fact that the existing 24 Hr AADT is 1,449 PCUs, this is therefore clearly a very lightly trafficked Regional Road. It is recognised that the capacity of roads of this nature are ordinarily determined by the capacity of terminal junctions. However, strictly in terms of link capacity the road is clearly very lightly trafficked

2.8 The fourth arm of the crossroads is another local road, the L7016. The L7016 currently carries a 24Hr Annual Average Daily Traffic (AADT) of approximately 403 PCUs immediately NW of Boherdurrow Crossroads. This is also a very lightly trafficked road.

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2.9 We have undertaken detailed modelling and analysis of the proposed priority controlled access junction, the existing Boherdurrow Crossroads and the adjacent off-set spur T Junction of the L3010/L7016. Capacity Modelling using TII-approved software was undertaken for a year of opening 2021 and design year 2036 in accordance with industry Guidelines. It should be noted that in light of the very positive capacity results, any requirement to select a later opening or design year is considered very unlikely to affect the conclusions of the study.

2.10 A detailed classified traffic survey was undertaken of the key junctions and links in proximity to the site in November 2018 during normal school term. This included a comprehensive classified interval survey for each of the 2 modelled periods and an ATC Survey to supplement the turning movement surveys. This data was used in order to establish current peak hour traffic conditions and to establish the current usage of the roadways. Details of the surveys undertaken are included as ***Appendix B***, with the Peak Hour Network flows (expressed as PCUs) identified. This traffic survey has been used as the basis for the study.

Development Proposals

2.11 The proposed Development consists of the following elements:

- The construction of an Abattoir extension for the continued processing of Meat and Meat Products,
- Approximately 110 Full Time equivalent employees (between Operatives, Administration and Cleaning Staff on shifts),
- A safe design-led layout of the internal roads and infrastructure,
- The means of vehicular access to the site will be via a new high quality Priority T Junction onto the local road,
- Adequate off-street parking spaces for staff commensurate with the development,
- Adequate internal safe footpath linkages,
- Landscaping, signage and surface treatment.

2.12 The development has been designed to be accessible via 16.5m HGVs and ~10m HGVs plus a towed trailer, however these are expected to constitute a small proportion of the entire vehicular traffic associated with the development. The small scale of the entire facility is confirmed through the robust assessment of Traffic Generated, which is addressed further within Section 3 of this Report.

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Road Safety

2.13 A review of the Road Safety Authority (RSA) online collision database indicates that there are no significant accidents at the site during the period 2005 to 2014, save for a single vehicle accident which occurred in 2005.

2.14 The RSA Database for the local area is reproduced below as ***Figure 1.2*** There was one single car accident, with a single serious injury, reported at the Boherdurrow Crossroads which occurred in 2005.

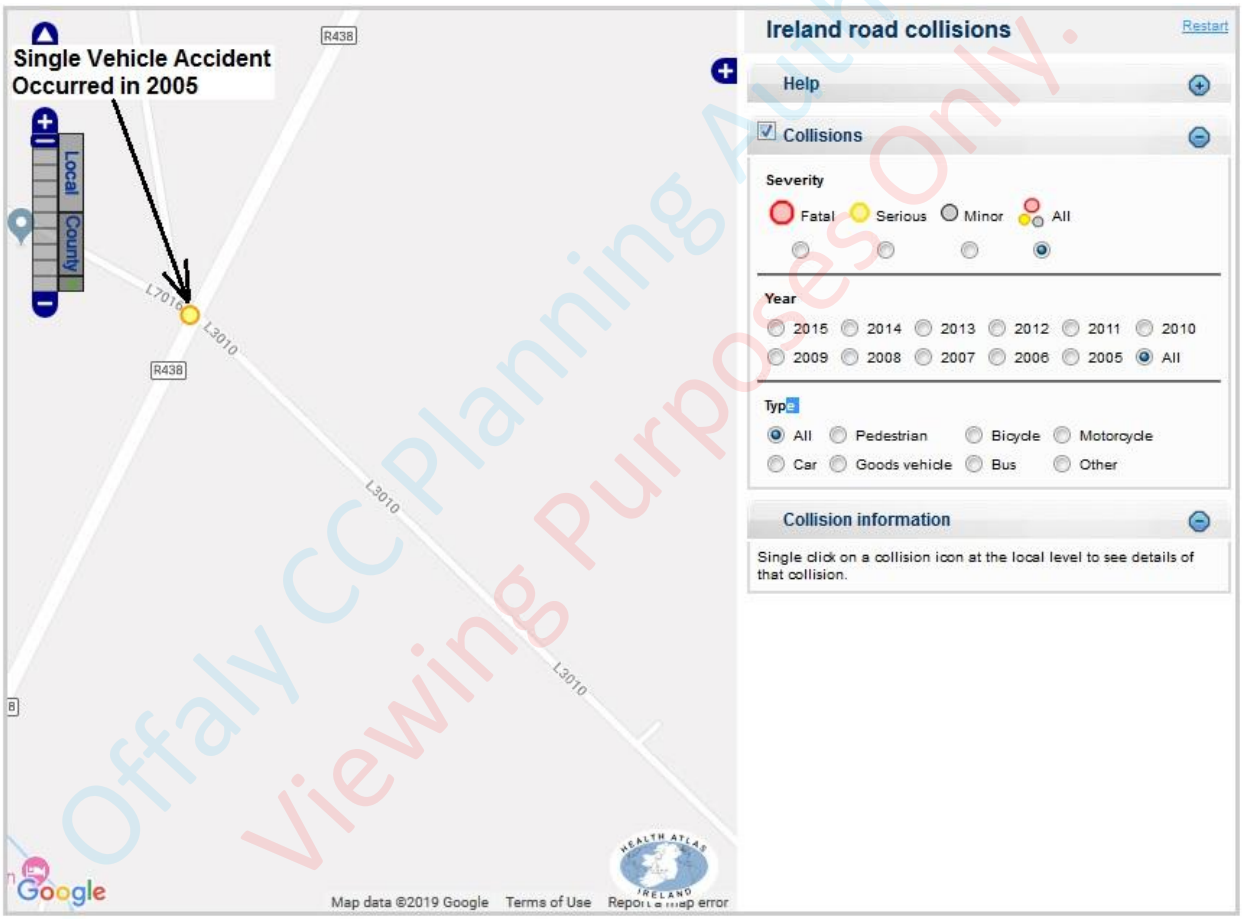

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Figure 1.2 - RSA On Line Record of Traffic Collisions

3.0 TRIP GENERATION, ASSIGNMENT AND DISTRIBUTION

3.1 The Trip Rate Information Computer System (TRICS) database is ordinarily used to ascertain vehicular trip generation associated with the use of any particular site. This represents industry standard practice for Transportation Assessments in accordance with the TII Transportation Assessment Guidelines. However, in the case of the subject site, there are no similar Abattoir Developments whatsoever within the TRICS Database, and in the circumstances we have assessed the traffic generated based on anticipated staffing and anticipated maximum plant production.

3.2 The maximum staffing levels are expected to be as set out below; -

- Admin staff:
  - Estimated 20 personnel
  - 9am to 5pm
- Slaughtering & Boning staff:
  - Estimated 80 personnel
  - 7am to 5pm
- Cleaning staff:
  - Estimated 10 personnel
  - 5pm to 10pm

3.3 For Abattoirs, there are 2 shifts generally operating, one for Product and then one following for cleaning, and this is reflected in the hours as set out above. In terms of the production operations, it is anticipated that the maximum throughput is as follows as ***Table 3.1***;

Table 3.1 - Vehicle Movements Associated with Operations

Purpose	Journeys	Frequency: Per Day / Week / Month	Vehicle
Delivery of Cattle to Site (Variable)	2	Day	Large HGV
	2	Day	Rigid Large Truck
	5	Day	Towed Trailer
	15	Day	Towed Trailer
Finished Product	5	Day	HGV 40 foot
Fuel Delivery	2	Month	Rigid Tanker
Waste Removal	3	Day	Rigid Truck
Sludge Removal	1	Day	Rigid Tanker
Chemical Delivery	1	Month	Rigid Truck

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3.4 We have included within ***Appendix C*** the detailed breakdown providing a robust estimation of total traffic generated by the subject site during the weekday periods, with the resulting worst case Traffic Generated as illustrated in ***Tables 3.2*** below.

Table 3.2: Worst Case Traffic Generated by Proposed Development (Production and Staffing Combined)

Proposed Development - Traffic Generation Calculations.				
Plant Production and Activities - Daily Movements				
Description	**Number**	**Vehicle Type (axles)**	**PCU Factor**	**One-Way Equiv PCU/Day**
Cattle Deliveries Per Day*	2	3	2.5	5
	2	3	2.5	5
	5	2	2	10
	15	2	2	30
Meat Products Out*	5	5	3	15
Waste Out*	3	2	2.5	7.5
Sludge Removal*	1	2	2.5	2.5
Chemical Deliveries/Fuel - per Mth	3	3	2.5	Negligible
Visitors to Site (Non Employees)	10	2	1	6
Production Staff 7am to 5pm	80	2	1	44
Administration Staff 9am-5pm	20	2	1	11
Cleaning Staff (5pm Start)	10	2	1	6
Total Equivalent One-Way PCUs Generated per Day				***142***
Total Equivalent 2-WAY Annual Average Daily Traffic Generated by Facility (PCUs)				***283***

3.5 For Staffing Arrivals and Departures it has been conservatively assumed that the Car Occupancy will be 1.8 people per car. It has also robustly been assumed that the production related vehicles are distributed over an 8 Hour Working Day, and this underscores the robustness of the assessment. The resulting breakdown of the impact of the development on the key-critical weekday AM and PM Commuter Peak Hours are as set out below as ***Table 3.3***;

Table 3.3 - Worst Case Traffic Generated by Proposed Fully Operational Facility

WORST CASE Peak Hour Arrivals and Departures (PCUs or Car Equivalents)			
Hour	**Arrivals**	**Departures**	**2-Way**
Weekday AM Peak Hour (8-9am)	21	10	31
Weekday PM Peak Hour (5-6pm)	15	66	81

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3.6 The total traffic generated by the development comprises an AADT of 283 PCUs within a 24 Hr Period. Whilst we appreciate that the local roads are lightly trafficked, nonetheless this is a very small amount of traffic by any measure.

3.7 Notwithstanding, in light of observation of existing capacity conditions, and the existing very lightly trafficked roads, the use of significantly higher Trip Rates, if required, would have absolutely no impact upon the conclusions of the study. This is particularly the case given the clear modelled theoretical reserve capacity demonstrated in the proposed access junction, in the adjacent Boherdurrow Crossroads and the tiny resultant impact of the development on all other junctions and links.

3.8 We undertook a Traffic Survey of the existing road and affected junctions in order to establish background traffic conditions. Details of the surveys are also included here as ***Appendix B*** and are reproduced as Traffic Flow Diagrams in ***Appendix C.***.

3.9 In Traffic Engineering all vehicles are expressed in terms of "Passenger Car Units" (PCUs), sometimes referred to as "Car Equivalents". This is the methodology that has been employed here, with specific industry standard conversion factors to convert HGVs, Skip Lorries, Cars/Trailers and Bin Lorries to PCUs. The conversion factors used are in accordance with industry-standard recommendations.

3.10 Development traffic is assigned to the road network based on the reasonable and industry standard assumption that the trip patterns will mirror the existing established weekday AM and PM peak hour traffic count data in terms of traffic turning proportions and distribution at junctions and in particular here, they reflect the observed patterns during the commuter peak hours on the local roads.

3.11 The TII Professional Guidance recommends that we are required to provide a robust and onerous assessment of the likely impact of the proposed development, in order to provide reassurance that the road infrastructure is adequate to accommodate a facility. We have therefore assigned the development traffic to the local roads based on the onerous assumption that ALL of the traffic is new traffic, constituting Primary Trips.

3.12 The resulting traffic flow diagrams for the subject site are included as ***Appendix C***.

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3.13 We have selected a year of opening of 2021 for the purposes of this assessment, however it should be noted that minor changes of 2-3 years in the selected or actual year of opening will have no impact on the conclusions of the study. We have also undertaken assessment of the Design Year 2036, 15 years following opening.

3.14 Traffic growth factors for future year assessments were calculated from data obtained in the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3, which provides the recommended method of predicting future year traffic growth on Roads. Calculations of the relevant growth factors are included in ***Table 3.4*** below (based on tabulated 'medium growth' in the Offaly Area).

Table 3.4 - Traffic Growth Rates, TII Project Appraisal Guidelines

Year	to Year	Table 5.5.1:
2018	2021	1.046
2021	2036	1.250

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4.0 TRAFFIC IMPACT - JUNCTION CAPACITY ASSESSMENT

4.1 In accordance with our methodology, we have followed TII's Traffic and Transportation Assessment Guidelines, in the assessment of the traffic impact resulting from the proposed development.

4.2 TII's Traffic and Transportation Assessment Guidelines recommends that a threshold assessment & analysis is undertaken to determine the increases in traffic associated with any particular development, and whether this might be considered as significant. For developments to be located in areas with roads that are considered as 'congested', the Guidance recommends the use of ***Threshold-levels of traffic increase of 5%***, which if exceeded require further assessment to be undertaken. The Threshold level is set at **10% for uncongested conditions**.

4.3 We have used the 10% threshold as a guide in the assessment, however we have specifically assessed the impact upon the key local junctions.

4.4 We have therefore undertaken traffic modelling of the Access Junction for weekday AM and PM Periods (2021 and 2036). We have also undertaken modelling of the adjacent Boherdurrow Crossroads and the nearby L3010/L7016 local road T Junction for the 2021 and 2036 assessment years.

4.5 We have also included herein an assessment of the changes in 24Hr AADT as a result of the proposed development as Page 7 of Appendix C (and this is illustrated below as an extract within ***Figure 4.1)***; -

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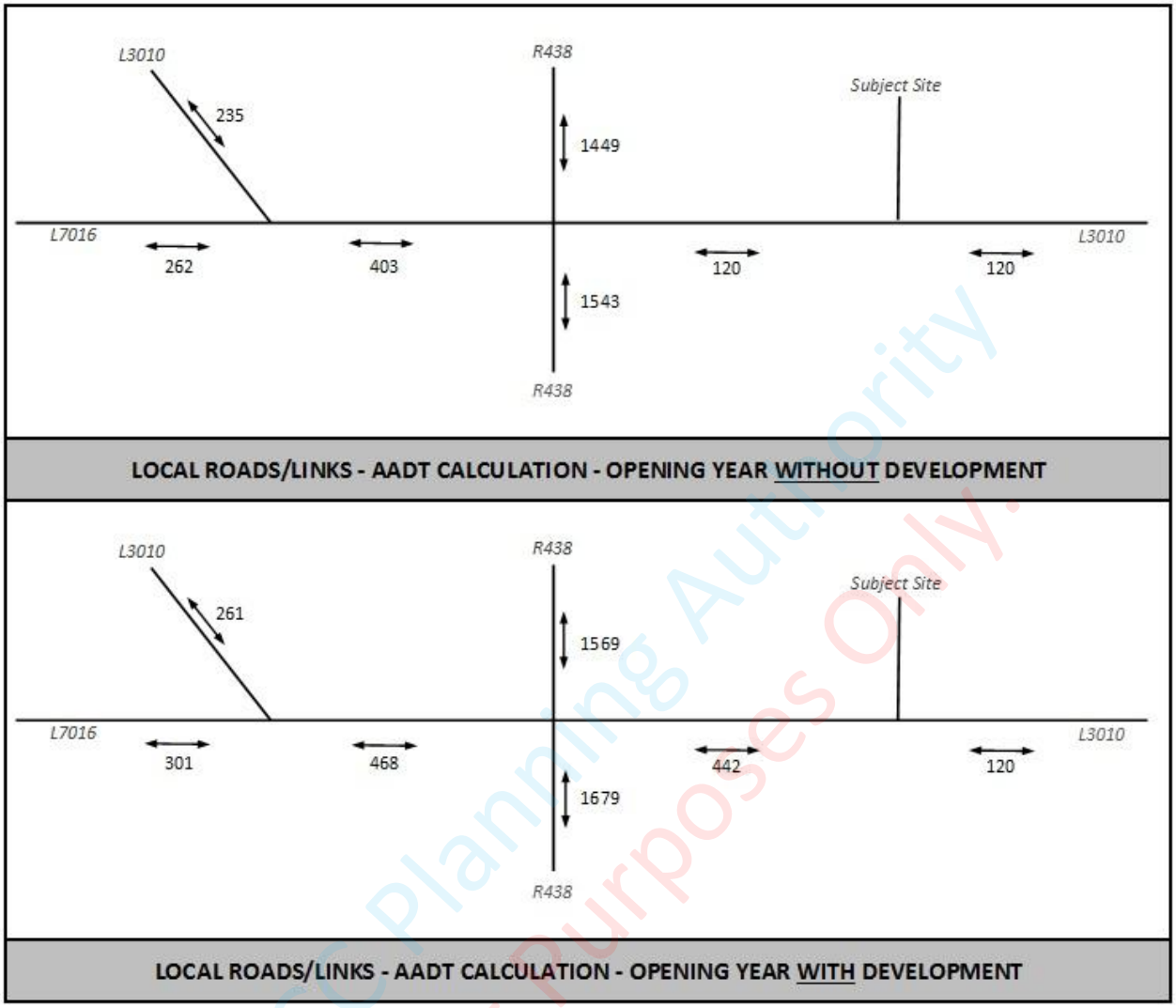

Figure 4.1 - 24 Hr AADT Flows WITH and WITHOUT Development

4.6 The above assessment clearly illustrates the very small changes in traffic flows as a result of the proposed development.

Junction Capacity Modelling

4.7 We have used the TII-approved software package 'Junctions 9' PICADY' (**P**riority **I**ntersection **C**apacity and **D**ela**y**) software package (as part of the TRL Package 'Junction 9') to assess the capacity of all of the adjacent junction, including the design of the proposed access junction, to accommodate the completed development.

4.8 PiCADY produces results based on a ratio of flow to capacity (RFC) and queue length. An RFC greater than 1.00 indicates that a junction is operating at or above capacity, with 0.85 considered to be the optimum RFC value.

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Site Access Junction

4.9 We have appended the detailed computer simulation model results (PiCADY Outputs) of the site access junction modelling in ***Appendix D.*** A summary of the results is reproduced below as ***Table 4.2***

Table 4.2: Vehicular Access Junction– Summary PiCADY Results, Worst Case Weekday AM, PM Commuter Peak Hours - 2021 and 2036

Modelled Scenario	Period ***Mean-Max*** Q (PCUs)	Period Max RFC
Opening Year 2021 AM Peak Hr	<1	0.02
Opening Year 2021 PM Peak Hr	<1	0.13
Design Year 2036 AM Peak Hr	<1	0.27
Design Year 2036 PM Peak Hr	<1	0.27

4.10 The results of the modelling clearly show that the proposed amended vehicular access junction will have way more than adequate capacity to accommodate the worst case traffic associated with the Development. All of the RFCs are way below the theoretical capacity of 0.85 and no significant queuing whatsoever is anticipated. This confirms the common sense understanding that traffic associated with the development will not result in any problems whatsoever occurring.

4.11 The results are so favourable that we are confident that the access junction could accommodate very significantly higher traffic volumes without any noticeable increased capacity related problems arising.

L3010/L7016 Off Set T Junction Analysis

4.12 We have appended the detailed computer simulation model results (PiCADY Outputs) of the existing junction layout in ***Appendix E.*** A summary of the results is reproduced below as ***Table 4.3***

Table 4.3: L3010/L7016 T-Junction– Summary PiCADY Results, Worst Case Weekday AM, PM Commuter Peak Hours - 2021 and 2036

Modelled Scenario	Period ***Mean-Max*** Q (PCUs)	Period Max RFC
Opening Year 2021 AM Peak Hr	<1	0.02
Opening Year 2021 PM Peak Hr	<1	0.05
Design Year 2036 AM Peak Hr	<1	0.02
Design Year 2036 PM Peak Hr	<1	0.06

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4.13 The results of the modelling clearly show that the existing T Junction will have way more than adequate capacity to accommodate the worst case traffic associated with the Development

Boherdurrow Crossroads - Junction Analysis

4.14 We have appended the detailed computer simulation model results (PiCADY Outputs) of the existing crossroads junction layout in ***Appendix F.*** A summary of the results is reproduced below as ***Table 4.4***

Table 4.4: Boherdurrow Crossroads Junction– Summary PiCADY Results, Worst Case Weekday AM, PM Commuter Peak Hours - 2021 and 2036

Modelled Scenario	Period ***Mean-Max*** Q (PCUs)	Period Max RFC
Opening Year 2021 AM Peak Hr	<1	0.04
Opening Year 2021 PM Peak Hr	<1	0.16
Design Year 2036 AM Peak Hr	<1	0.05
Design Year 2036 PM Peak Hr	<1	0.16

4.15 The results of the modelling clearly show that the existing Crossroads Junction will have way more than adequate capacity to accommodate the worst case traffic associated with the Development

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4.16 The above analysis considered together confirms that the construction and operation of the development will have a negligible impact upon the capacity and safety of the road network in the area and can easily be accommodated.

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5.0 CONCLUSIONS

5.1 This Transportation Assessment assesses the traffic impact of the proposed extension to the existing Abattoir Development at Boherdurrow Crossroads, Banagher, Co Offaly.

5.2 This Report has been prepared in accordance with TII's Traffic & Transport Assessment Guidelines, and it provides an onerous and robust assessment of the impact of the proposed development on the local roads. It demonstrates that the proposed development generates very low volumes of traffic indeed.

5.3 This report demonstrates that the proposed development will have an unnoticeable impact upon the established and future local traffic conditions and can easily be accommodated on the road network with an amended simple priority junction located on the L3010, with improvements proposed to the width and alignment of the road from the junction with the local Regional Road.

5.4 An assessment of affected junction capacity has been undertaken based on recent traffic data and this confirms that the development will have an unnoticeable impact upon local traffic conditions.

5.5 Detailed capacity modelling of the Junctions has been undertaken and this confirms that the junction will operate without any capacity or safety issues arising.

5.6 A review of the Road Safety Authority database records indicates that there is no significant history of any accidents along the site frontage, save for a single vehicle accident at Boherdurrow Crossroads which occurred in 2005. In this regard, given the very low additional traffic volumes and the high quality of the access arrangement, we conclude that the development will not have any adverse impact upon traffic safety.

5.7 It is considered that there are no significant Operational Traffic Safety or Road Capacity issues, affecting the established road network, that prevent a positive determination of the application for the Abattoir Extension by Offaly County Council.

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APPENDIX A

Proposed Development
Layout & Roads/Access

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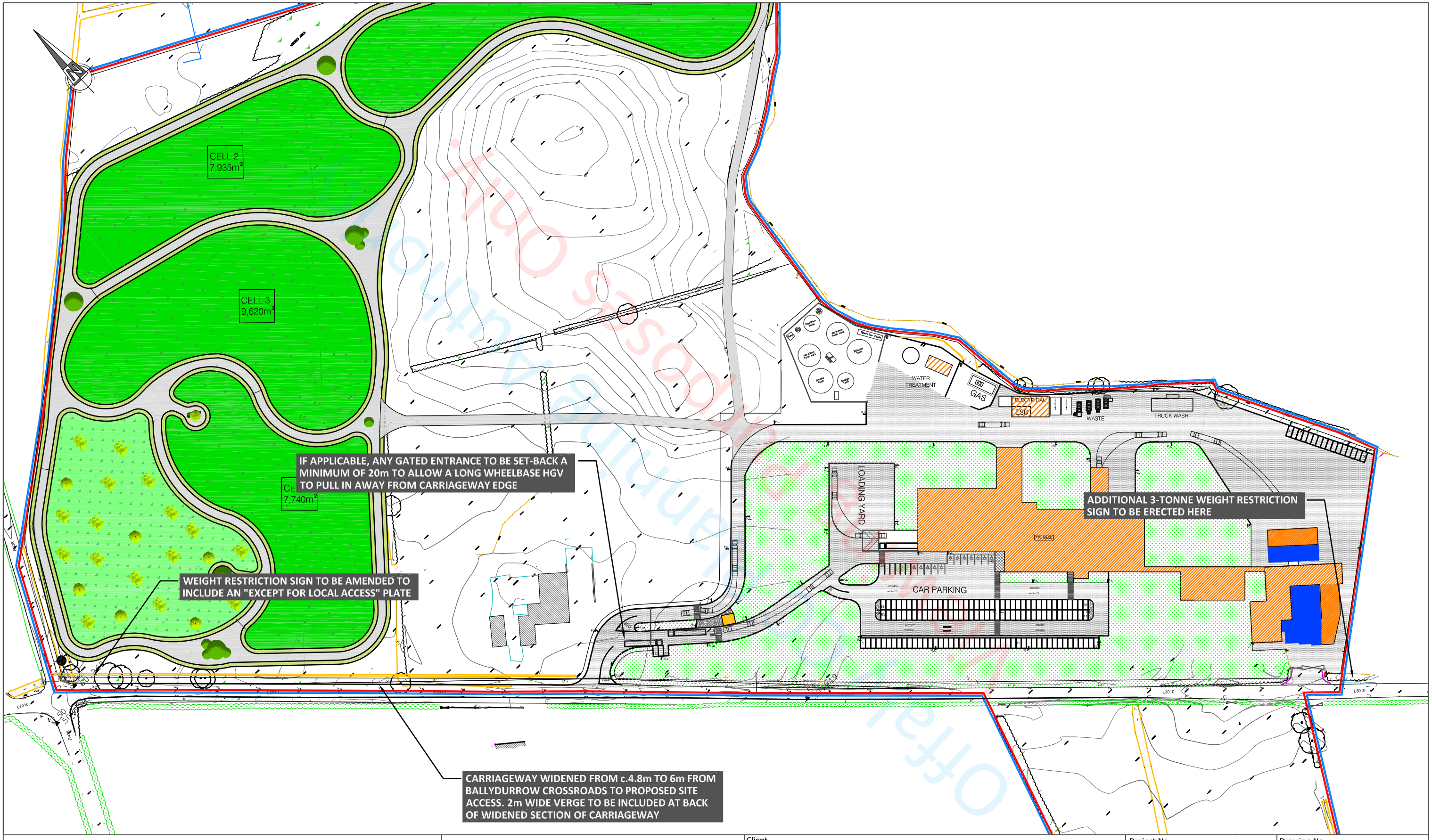

NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.

This drawing is based upon Carey Associates Architects drawing 1806-06-Rev5 Site Layout Plan (Full Holding), received 17/06/19. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

NRB Consulting Engineers Ltd
8 Leopardstown Business Centre
Ballyogan Avenue
Leopardstown
Dublin 18

Phone/Fax: +353 1 292 1941
Email: info@nrb.ie
Web: www.nrb.ie
Registered In Ireland No. 491679

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Client

Project: Banagher Access Offaly

Title: Proposed Site Layout

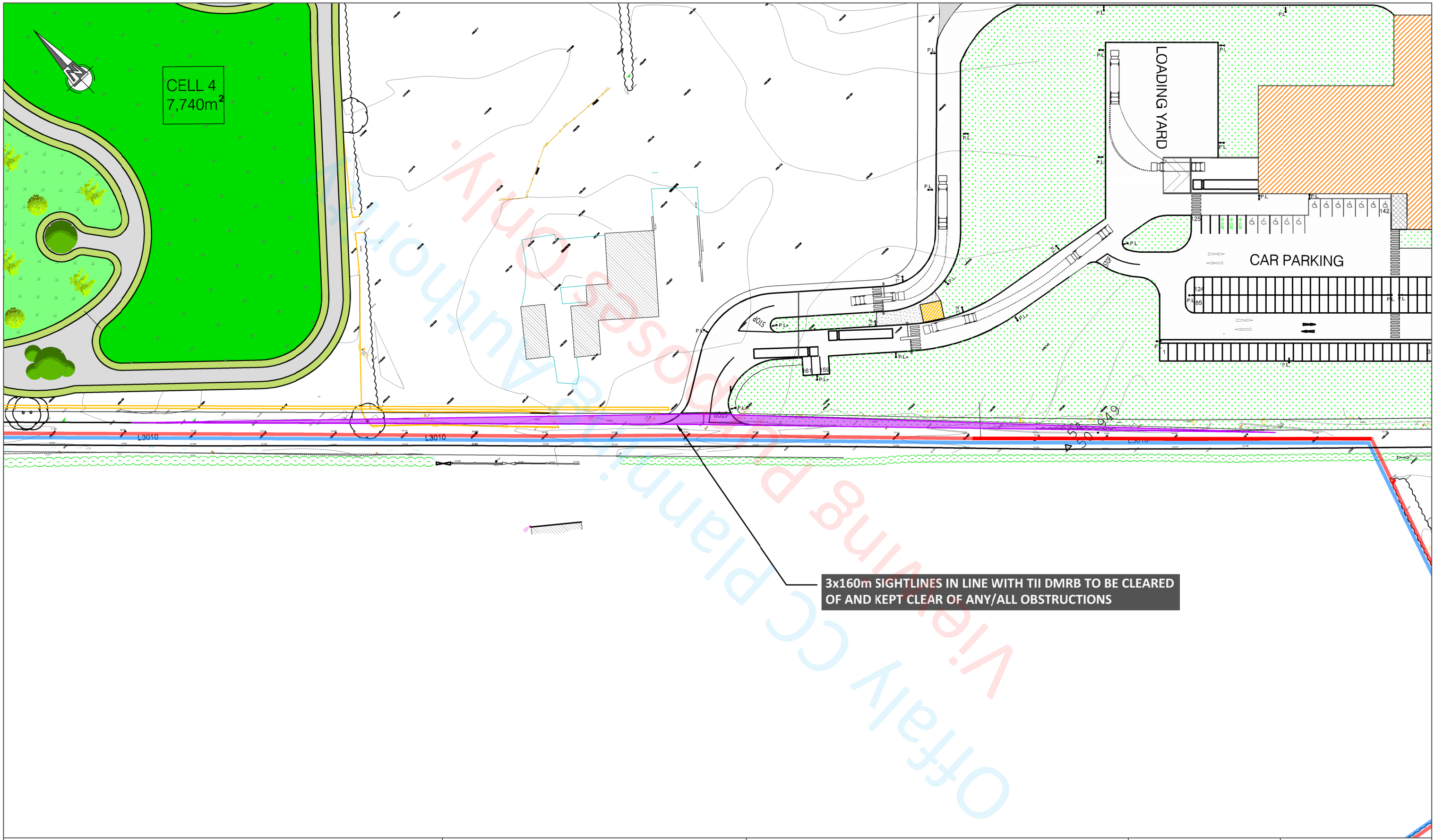
NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Project No.	Drawing No.
18-101	NRB-TA-001

Drawn	Checked	Approved
PB	ER 17/06/19	ER 17/06/19

Date	Scale @ A3	Rev
17-Jun-19	n.t.s	-

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



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NRB Consulting Engineers Ltd
8 Leopardstown Business Centre
Ballyogan Avenue
Leopardstown
Dublin 18

Phone/Fax: +353 1 292 1941
Email: info@nrb.ie
Web: www.nrb.ie
Registered in Ireland No. 491679

NRB consulting engineers

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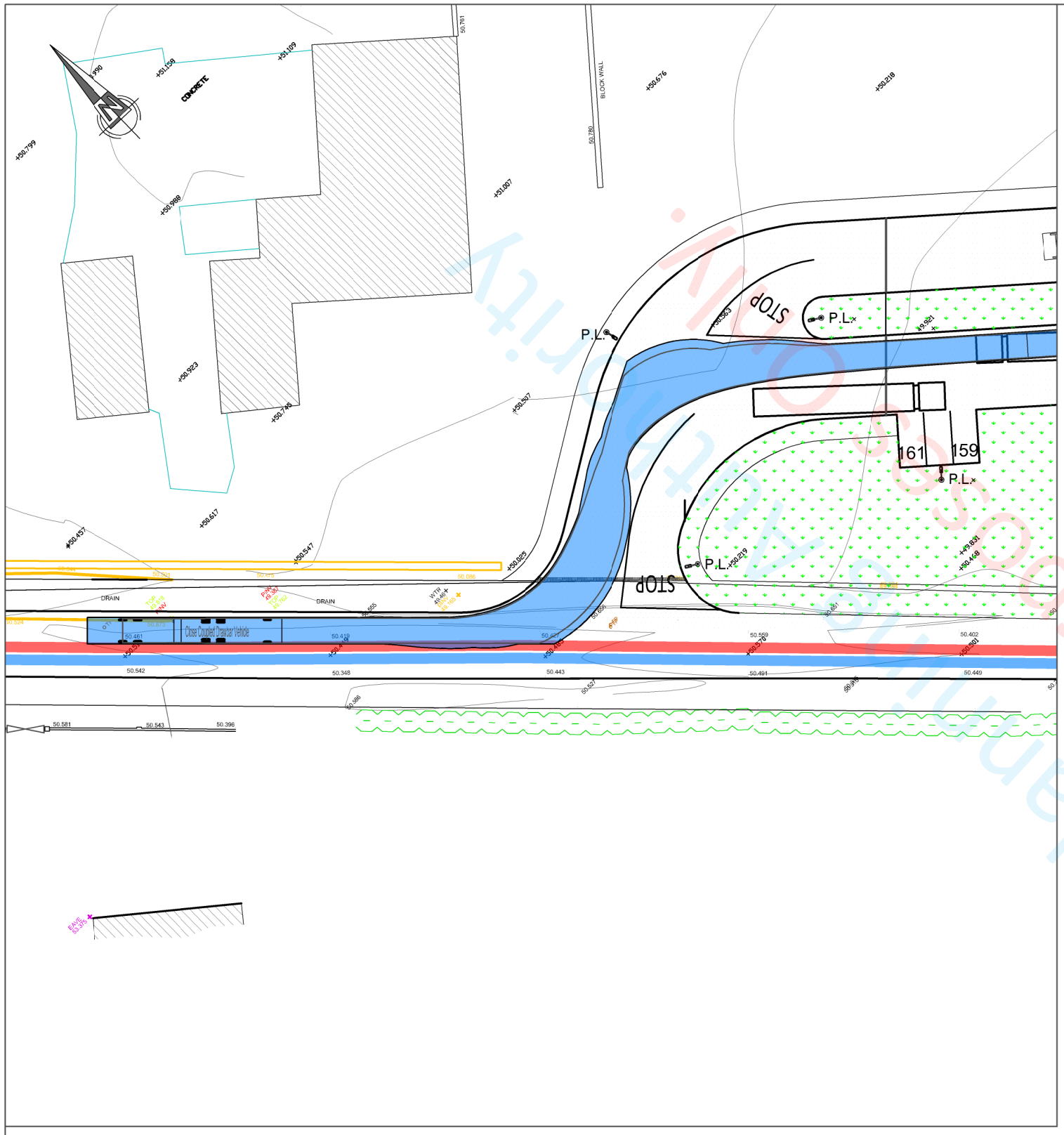
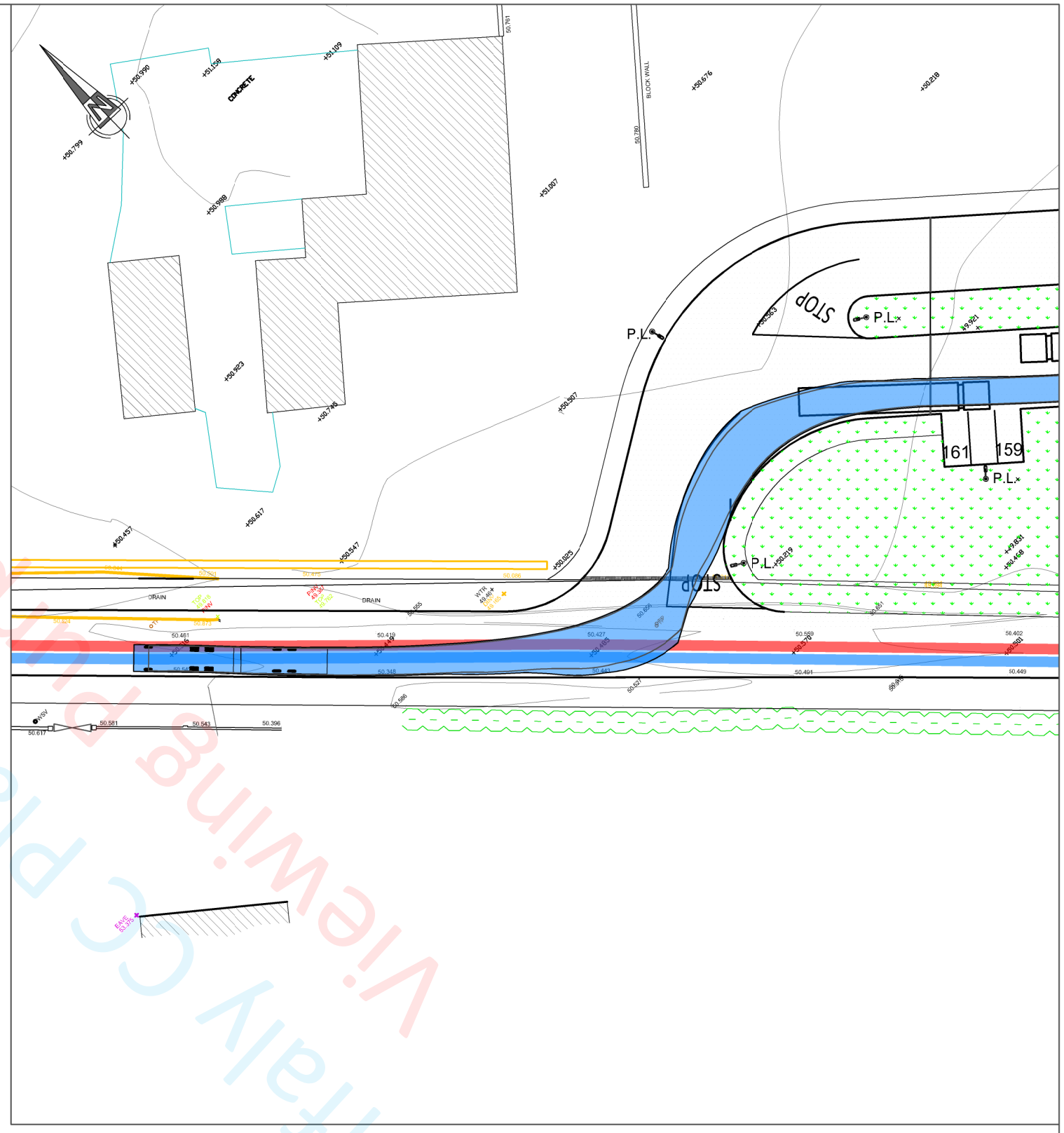
Client		Project No. 18-101	Drawing No. NRB-TA-002
Project	Banagher Access Offaly	Drawn PB	Checked ER 17/06/19 / Approved ER 17/06/19
Title	Proposed Site Access Sightlines	Date 17-Jun-19	Scale @ A3 1:1000 / Rev -

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction



AUTOTRACK OF A LARGE (c.18m LONG) DRAWBAR VEHICLE ENTERING AT THE PROPOSED SITE ACCESS



AUTOTRACK OF A LARGE (c.18m LONG) DRAWBAR VEHICLE EXITING AT THE PROPOSED SITE ACCESS

NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.

This drawing is based upon Carey Associates Architects drawing 1806-06-Rev5 Site Layout Plan (Full Holding), received 17/06/19. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

NRB Consulting Engineers Ltd
8 Leopardstown Business Centre
Ballyogan Avenue
Leopardstown
Dublin 18

Phone/Fax: +353 1 292 1941
Email: info@nrb.ie
Web: www.nrb.ie
Registered in Ireland No. 491679

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Client		Project No. 18-101	Drawing No. NRB-TA-003
Project	Banagher Access Offaly	Drawn PB	Checked ER 17/06/19 / Approved ER 17/06/19
Title	Proposed Site Access AutoTRACKs	Date 17-Jun-19	Scale @ A3 1:500 / Rev -

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Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction

Not for Planning Application Purposes
Preliminary Design Only
Awaiting Public Consultation

APPENDIX B

Traffic Survey Data - Output

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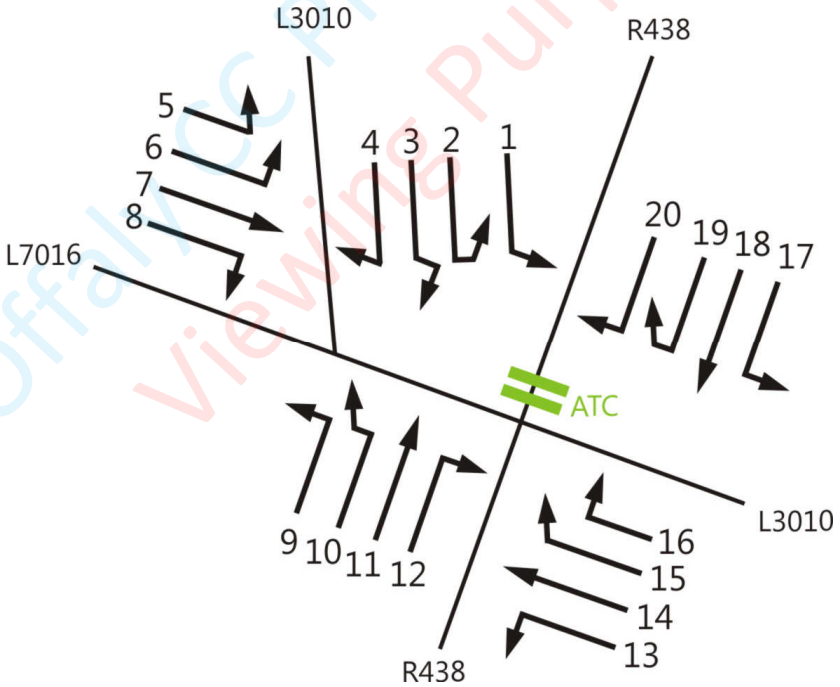
Site Location

Movement Numbering



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Job number: TRA/18/204	Job Date: November 2018	Drawing No: TRA/18/204-01	traffinomics.ie
Client: NRB	Job Day: Thursday	Author: SPW	

BANAGHER TRAFFIC COUNT **NOVEMBER 2018**
MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/18/204**

SITE: 01 DATE: Nov

LOCATION: R438/L7016/L3010 Boherdurrow DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3								MOVEMENT 4							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
08:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0
08:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
09:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	10	0	0	0	10	10	0	0	0	0	0	0	0	0
P/TOT	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1	0	0	14	0	0	0	14	14	0	0	0	0	0	0	0	0

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3								MOVEMENT 4							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3	1	0	0	4	4	0	0	1	0	0	0	1	1
17:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
17:45	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	2	0	0	0	2	2
18:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0
P/TOT	0	0	3	1	0	0	4	4	0	0	1	0	0	0	1	1	0	0	12	1	0	0	13	13	0	0	3	0	0	0	3	3

Offaly CC Planning Authority
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BANAGHER TRAFFIC COUNT **NOVEMBER 2018**
MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/18/204**

SITE: 01 DATE: Nov

LOCATION: R438/L7016/L3010 Boherdurrow DAY: Thursday

	MOVEMENT 5								MOVEMENT 6								MOVEMENT 7								MOVEMENT 8							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
08:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
08:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	2	0	0	0	2	2	0	0	3	1	0	0	4	4
08:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:45	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	2	0	0	0	2	2	0	0	1	0	1	0	2	3	0	0	4	0	0	0	4	4	0	0	1	0	0	0	1	1
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	1	0	3	4	0	0	3	0	1	0	4	5	0	0	6	0	1	0	7	8	0	0	2	0	0	0	2	2
P/TOT	0	0	2	0	1	0	3	4	0	0	6	0	1	0	7	8	0	0	8	0	1	0	9	10	0	0	5	1	0	0	6	6

	MOVEMENT 5								MOVEMENT 6								MOVEMENT 7								MOVEMENT 8							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	1	1	0	0	2	2
16:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	8	1	0	0	9	9	0	0	2	0	0	0	2	2	0	0	3	1	0	0	4	4
17:00	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	3	1	0	0	4	4	0	0	1	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
P/TOT	0	0	1	0	0	0	1	1	0	0	15	1	0	0	16	16	0	0	5	1	0	0	6	6	0	0	6	1	0	0	7	7

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BANAGHER TRAFFIC COUNT **NOVEMBER 2018**
MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/18/204**

SITE: 01 DATE: Nov

LOCATION: R438/L7016/L3010 Boherdurrow DAY: Thursday

	MOVEMENT 9								MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0
07:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	10	0	1	0	11	12	0	0	0	0	0	0	0	0
08:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	12	0	1	0	13	14	0	0	0	0	0	0	0	0
08:15	0	0	1	1	0	0	2	2	0	0	1	0	0	0	1	1	0	0	14	1	0	0	15	15	0	0	0	0	0	0	0	0
H/TOT	0	0	3	2	0	0	5	5	0	0	1	0	0	0	1	1	0	0	42	1	2	0	45	47	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	18	1	0	0	19	19	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	3	0	0	12	1	0	0	13	13	0	0	0	0	0	0	0	0
09:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6	1	1	0	8	9	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	3	0	12	15	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	2	0	0	1	3	4	0	0	44	4	4	0	52	56	0	0	0	0	0	0	0	0
P/TOT	0	0	4	2	0	0	6	6	0	0	3	0	0	1	4	5	0	0	86	5	6	0	97	103	0	0	0	0	0	0	0	0

	MOVEMENT 9								MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4	0	0	9	3	0	0	12	12	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	11	4	2	0	17	19	0	0	0	0	0	0	0	0
16:30	0	0	2	1	0	0	3	3	0	0	2	3	0	0	5	5	0	0	6	3	0	0	9	9	0	0	0	0	0	0	0	0
16:45	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	9	3	0	0	12	12	0	0	0	0	0	0	0	0
H/TOT	0	0	3	2	0	0	5	5	0	0	10	4	0	0	14	14	0	0	35	13	2	0	50	52	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	13	3	2	0	18	20	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	6	1	0	0	7	7	0	0	15	1	3	0	19	22	0	0	0	0	0	0	0	0
17:30	0	0	2	0	0	0	2	2	0	0	3	0	0	0	3	3	0	0	17	0	0	0	17	17	0	0	1	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	1	0	17	18	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	0	0	2	2	0	0	11	1	0	0	12	12	0	0	61	4	6	0	71	77	0	0	1	0	0	0	1	1
18:00	0	0	1	0	0	0	1	1	0	0	2	1	0	0	3	3	0	0	16	0	1	0	17	18	0	0	0	0	0	0	0	0
18:15	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	12	1	0	0	13	13	0	0	0	0	0	0	0	0
H/TOT	0	0	3	0	0	0	3	3	0	0	3	1	0	0	4	4	0	0	28	1	1	0	30	31	0	0	0	0	0	0	0	0
P/TOT	0	0	8	2	0	0	10	10	0	0	24	6	0	0	30	30	0	0	124	18	9	0	151	160	0	0	1	0	0	0	1	1

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Viewing Purposes Only.

BANAGHER TRAFFIC COUNT **NOVEMBER 2018**
MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/18/204**

SITE: 01 DATE: Nov

LOCATION: R438/L7016/L3010 Boherdurrow DAY: Thursday

	MOVEMENT 13								MOVEMENT 14								MOVEMENT 15								MOVEMENT 16							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
08:15	0	0	0	1	0	0	1	1	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	0	1	1	0	0	2	1	0	0	3	3	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	8	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
P/TOT	0	0	0	1	0	0	1	1	0	0	10	1	0	0	11	11	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0

	MOVEMENT 13								MOVEMENT 14								MOVEMENT 15								MOVEMENT 16							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	5	1	0	0	6	6	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
17:00	0	0	0	1	0	0	1	1	0	0	3	1	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	0	1	0	0	1	1	0	0	4	1	0	0	5	5	0	0	0	0	1	0	1	2	0	0	1	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
P/TOT	0	0	0	1	0	0	1	1	0	0	9	2	0	0	11	11	0	0	1	0	1	0	2	3	0	0	2	2	0	0	4	4

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BANAGHER TRAFFIC COUNT **NOVEMBER 2018**
MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/18/204**

SITE: 01 DATE: Nov

LOCATION: R438/L7016/L3010 Boherdurrow DAY: Thursday

	MOVEMENT 17								MOVEMENT 18								MOVEMENT 19								MOVEMENT 20							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	3	2	1	0	6	7	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	12	2	0	0	14	14	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:00	0	0	0	0	0	0	0	0	0	0	8	2	1	0	11	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	9	6	1	0	16	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	32	12	3	0	47	50	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
08:30	0	0	0	0	0	0	0	0	0	0	13	3	1	0	17	18	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	0	0	13	1	1	0	15	16	0	0	0	0	0	0	0	0	0	0	4	1	0	1	6	7
09:00	0	0	0	0	0	0	0	0	0	0	6	1	0	0	7	7	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:15	0	0	1	0	0	0	1	1	0	0	7	1	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	39	6	2	0	47	49	0	0	0	0	0	0	0	0	0	0	6	1	0	1	8	9
P/TOT	0	0	1	0	0	0	1	1	0	0	71	18	5	0	94	99	0	0	0	0	0	0	0	0	0	0	9	1	0	1	11	12

	MOVEMENT 17								MOVEMENT 18								MOVEMENT 19								MOVEMENT 20							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	0	0	0	0	0	0	0	0	5	1	1	0	7	8	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:15	0	0	1	0	0	0	1	1	0	0	4	1	0	0	5	5	0	0	1	0	0	0	1	1	0	0	1	1	0	0	2	2
16:30	0	0	0	0	0	0	0	0	0	0	11	1	1	0	13	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	9	1	0	0	10	10	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
H/TOT	0	0	1	0	0	0	1	1	0	0	29	4	2	0	35	37	0	0	1	0	0	0	1	1	0	0	6	1	0	0	7	7
17:00	0	0	0	0	0	0	0	0	0	0	10	1	0	0	11	11	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
17:15	0	0	0	0	0	0	0	0	0	0	25	0	0	0	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	15	0	0	0	15	15	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	10	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	60	1	0	0	61	61	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5
18:00	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16	16	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	11	1	1	0	13	14	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	27	1	1	0	29	30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
P/TOT	0	0	1	0	0	0	1	1	0	0	116	6	3	0	125	128	0	0	3	0	0	0	3	3	0	0	13	1	0	0	14	14

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BANAGHER TRAFFIC COUNT/SPEED SURVEY **NOVEMBER 2018**
AUTOMATIC TRAFFIC COUNT **TRA/18/204**

SITE: 01 DAY: Thursday

LOCATION: R438 Cloghan Road (Google Maps Ref: 53.173034, -7.945650) DATE: Nov

	NORTHBOUND								SOUTHBOUND							
TIME:	CYC	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCU	CYC	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCU
07:00	0	5	0	0	0	0	**5**	**5**	0	6	5	0	0	0	**11**	**11**
07:15	0	7	1	0	1	0	**9**	**10**	0	6	0	0	0	0	**6**	**6**
07:30	0	7	2	0	0	0	**9**	**9**	0	5	4	0	0	0	**9**	**9**
07:45	0	11	0	0	1	0	**12**	**13**	0	10	3	0	0	0	**13**	**13**
H/TOT	0	30	3	0	2	0	35	38	0	27	12	0	0	0	39	39
08:00	0	9	0	0	0	0	**9**	**9**	0	10	4	0	1	0	**15**	**16**
08:15	0	13	0	0	1	0	**14**	**15**	0	6	1	0	1	0	**8**	**9**
08:30	0	21	0	0	0	0	**21**	**21**	0	12	8	0	0	0	**20**	**20**
08:45	0	12	0	0	0	0	**12**	**12**	0	18	5	1	0	0	**24**	**25**
H/TOT	0	55	0	0	1	0	56	57	0	46	18	1	2	0	67	70
09:00	0	15	3	0	0	0	**18**	**18**	0	9	2	0	0	0	**11**	**11**
09:15	0	6	0	1	1	0	**8**	**10**	0	5	1	0	0	0	**6**	**6**
09:30	0	12	2	1	1	0	**16**	**18**	0	9	2	0	0	0	**11**	**11**
09:45	0	10	0	0	0	0	**10**	**10**	0	11	1	0	0	0	**12**	**12**
H/TOT	0	43	5	2	2	0	52	56	0	34	6	0	0	0	40	40
10:00	0	15	1	0	0	0	**16**	**16**	0	7	0	0	0	0	**7**	**7**
10:15	0	13	0	1	0	0	**14**	**15**	0	2	1	1	0	0	**4**	**5**
10:30	0	6	0	0	0	0	**6**	**6**	0	7	0	0	1	0	**8**	**9**
10:45	0	8	0	0	0	0	**8**	**8**	0	3	5	0	0	0	**8**	**8**
H/TOT	0	42	1	1	0	0	44	45	0	19	6	1	1	0	27	29
11:00	0	7	0	1	0	0	**8**	**9**	0	2	0	1	1	0	**4**	**6**
11:15	0	4	2	0	1	0	**7**	**8**	0	10	4	0	1	0	**15**	**16**
11:30	0	7	2	1	1	0	**11**	**13**	0	3	0	0	1	0	**4**	**5**
11:45	0	5	1	0	0	0	**6**	**6**	0	3	1	0	1	0	**5**	**6**
H/TOT	0	23	5	2	2	0	32	36	0	18	5	1	4	0	28	34
12:00	0	8	3	0	1	0	**12**	**13**	0	6	1	0	1	0	**8**	**9**
12:15	0	4	3	0	0	0	**7**	**7**	0	3	0	0	0	0	**3**	**3**
12:30	0	11	0	0	0	0	**11**	**11**	0	3	2	0	3	0	**8**	**12**
12:45	0	3	3	0	2	0	**8**	**11**	0	6	2	0	1	0	**9**	**10**
H/TOT	0	26	9	0	3	0	38	42	0	18	5	0	5	0	28	35
13:00	0	5	1	0	1	0	**7**	**8**	0	3	2	0	0	0	**5**	**5**
13:15	0	9	0	0	0	0	**9**	**9**	0	12	1	0	0	0	**13**	**13**
13:30	0	10	0	0	2	0	**12**	**15**	0	3	3	0	0	0	**6**	**6**
13:45	0	10	0	0	2	0	**12**	**15**	0	8	1	0	0	0	**9**	**9**
H/TOT	0	34	1	0	5	0	40	47	0	26	7	0	0	0	33	33
14:00	0	11	1	1	3	0	**16**	**20**	0	8	0	0	1	0	**9**	**10**
14:15	0	8	1	1	0	0	**10**	**11**	0	4	2	0	1	0	**7**	**8**
14:30	0	12	0	1	1	0	**14**	**16**	0	13	2	0	2	0	**17**	**20**
14:45	0	13	1	0	1	0	**15**	**16**	0	6	2	0	0	0	**8**	**8**
H/TOT	0	44	3	3	5	0	55	63	0	31	6	0	4	0	41	46
15:00	0	8	1	0	1	0	**10**	**11**	0	7	1	1	0	0	**9**	**10**
15:15	0	7	2	0	1	0	**10**	**11**	0	7	0	1	0	0	**8**	**9**
15:30	0	12	3	2	2	0	**19**	**23**	0	9	3	0	1	0	**13**	**14**
15:45	0	10	1	0	2	1	**14**	**18**	0	20	3	1	0	0	**24**	**25**
H/TOT	0	37	7	2	6	1	53	63	0	43	7	3	1	0	54	57
16:00	0	15	2	1	0	0	**18**	**19**	0	12	2	0	0	0	**14**	**14**
16:15	0	13	5	0	1	0	**19**	**20**	0	6	4	0	1	0	**11**	**12**
16:30	0	15	0	0	1	0	**16**	**17**	0	3	2	0	0	0	**5**	**5**
16:45	0	7	3	0	0	0	**10**	**10**	0	16	1	0	1	0	**18**	**19**
H/TOT	0	50	10	1	2	0	63	66	0	37	9	0	2	0	48	51
17:00	0	15	4	0	0	0	**19**	**19**	0	10	1	0	0	0	**11**	**11**
17:15	0	14	4	0	1	0	**19**	**20**	0	17	1	1	0	0	**19**	**20**
17:30	0	18	3	0	1	0	**22**	**23**	0	21	1	0	0	0	**22**	**22**
17:45	0	14	1	0	1	0	**16**	**17**	0	15	0	0	0	0	**15**	**15**
H/TOT	0	61	12	0	3	0	76	80	0	63	3	1	0	0	67	68
18:00	0	18	4	0	0	0	**22**	**22**	0	14	0	0	0	0	**14**	**14**
18:15	0	13	2	0	0	0	**15**	**15**	0	15	2	0	0	0	**17**	**17**
18:30	0	12	1	0	0	0	**13**	**13**	0	17	1	0	2	0	**20**	**23**
18:45	0	7	3	0	0	0	**10**	**10**	0	14	2	0	0	0	**16**	**16**
H/TOT	0	50	10	0	0	0	60	60	0	60	5	0	2	0	67	70
P/TOT	0	495	66	11	31	1	604	651	0	422	89	7	21	0	539	570

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SITE 01
NORTHBOUND

Profile:

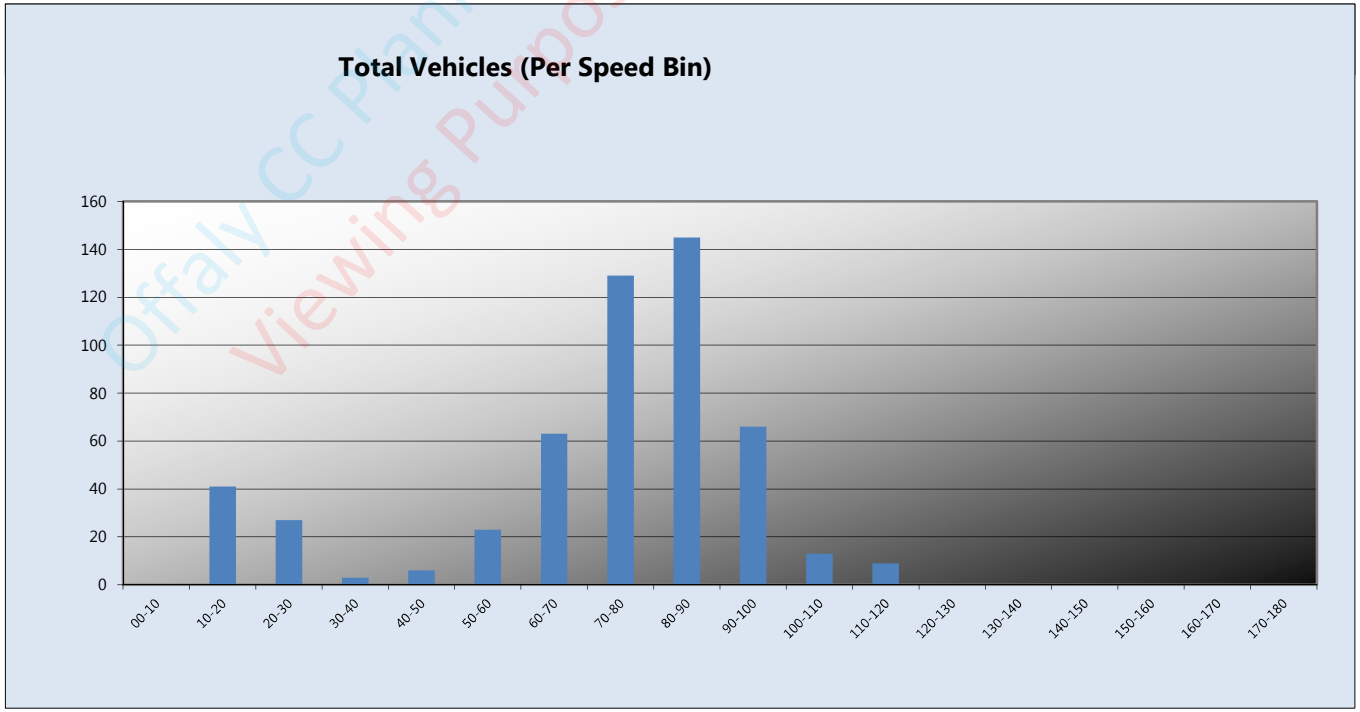
Filter time: 07:00 November 2018 => 19:00 November 2018
Speed range: 0 - 200 km/h.
Separation: Greater than 4.00 seconds. - (Headway)
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)

Vehicles = 525
Maximum = 119.6 km/h, Minimum = 10.1 km/h, Mean = 71.7 km/h

20 km/h Pace = 69 - 89, Number in Pace = 280 (53.33%)
Variance = 574.18, Standard Deviation = 23.96 km/h

Speed Bins:

Speed	Bin	
KPH	No.	%
00-10	0	0.0
10-20	41	7.8
20-30	27	5.1
30-40	3	0.6
40-50	6	1.1
50-60	23	4.4
60-70	63	12.0
70-80	129	24.6
80-90	145	27.6
90-100	66	12.6
100-110	13	2.5
110-120	9	1.7
120-130	0	0.0
130-140	0	0.0
140-150	0	0.0
150-160	0	0.0
160-170	0	0.0
170-180	0	0.0



Offaly CC Planning Authority
Viewing Purposes Only.

SITE 01
SOUTHBOUND

Profile:

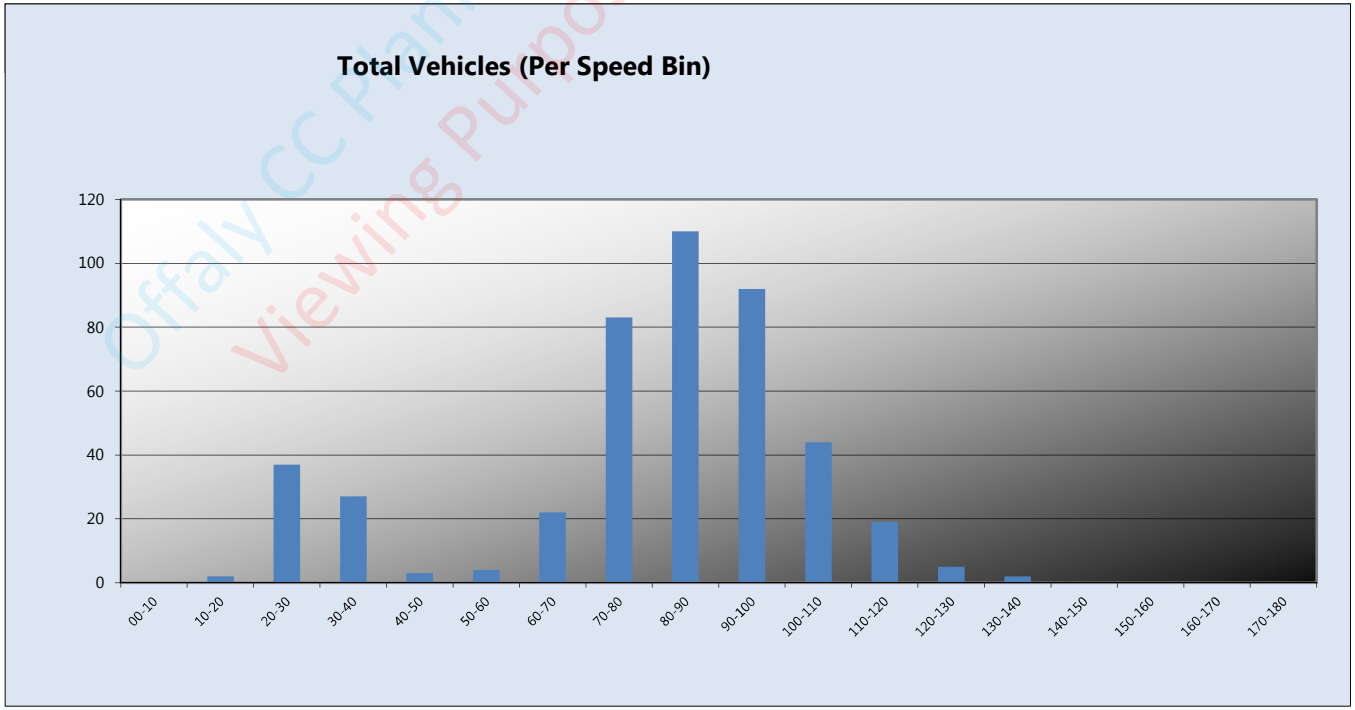
Filter time: 07:00 November 2018 => 19:00 November 2018
Speed range: 0 - 200 km/h.
Separation: Greater than 4.00 seconds. - (Headway)
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)

Vehicles = 450
Maximum = 135.2 km/h, Minimum = 11.7 km/h, Mean = 79.5 km/h

20 km/h Pace = 75 - 95, Number in Pace = 216 (48.00%)
Variance = 608.87, Standard Deviation = 24.68 km/h

Speed Bins:

Speed	Bin	
KPH	No.	%
00-10	0	0.0
10-20	2	0.4
20-30	37	8.2
30-40	27	6.0
40-50	3	0.7
50-60	4	0.9
60-70	22	4.9
70-80	83	18.4
80-90	110	24.4
90-100	92	20.4
100-110	44	9.8
110-120	19	4.2
120-130	5	1.1
130-140	2	0.4
140-150	0	0.0
150-160	0	0.0
160-170	0	0.0
170-180	0	0.0



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APPENDIX C

Traffic Flow Diagrams, Trip Generation, Trip Distribution, Network Traffic Flow Diagrams/ Projections and Before/After AADT Projections

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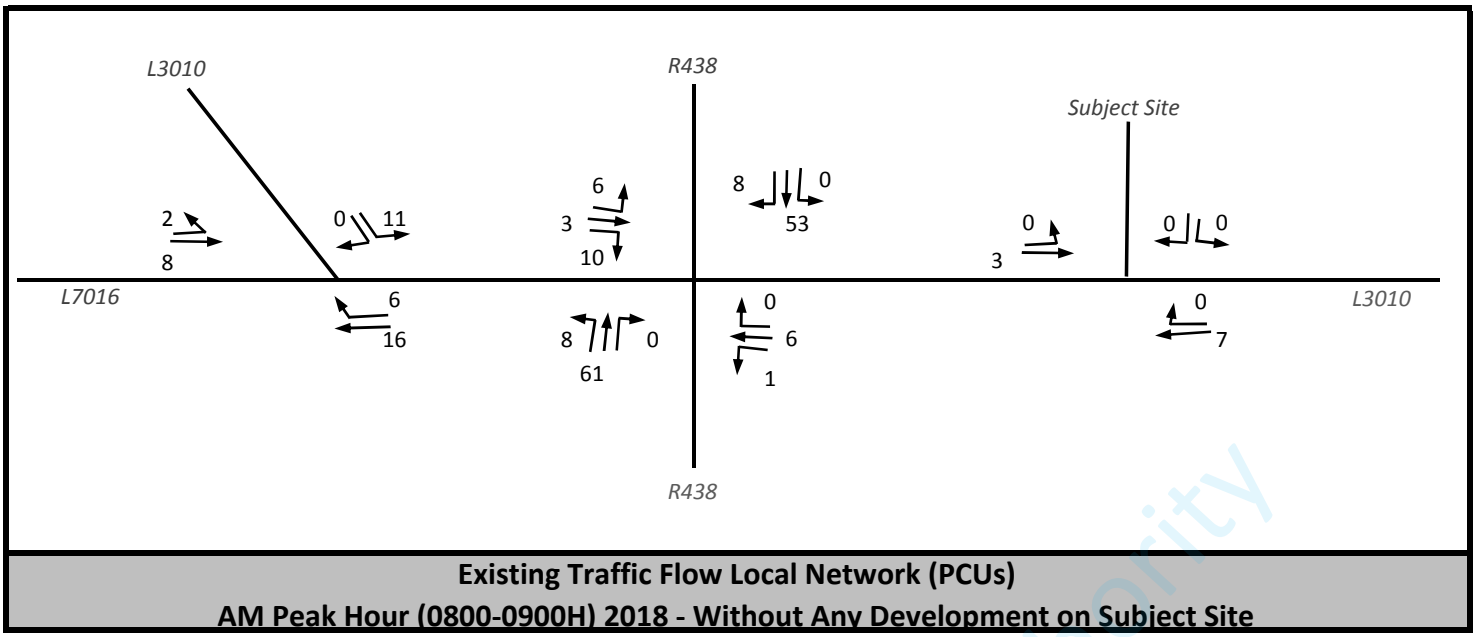
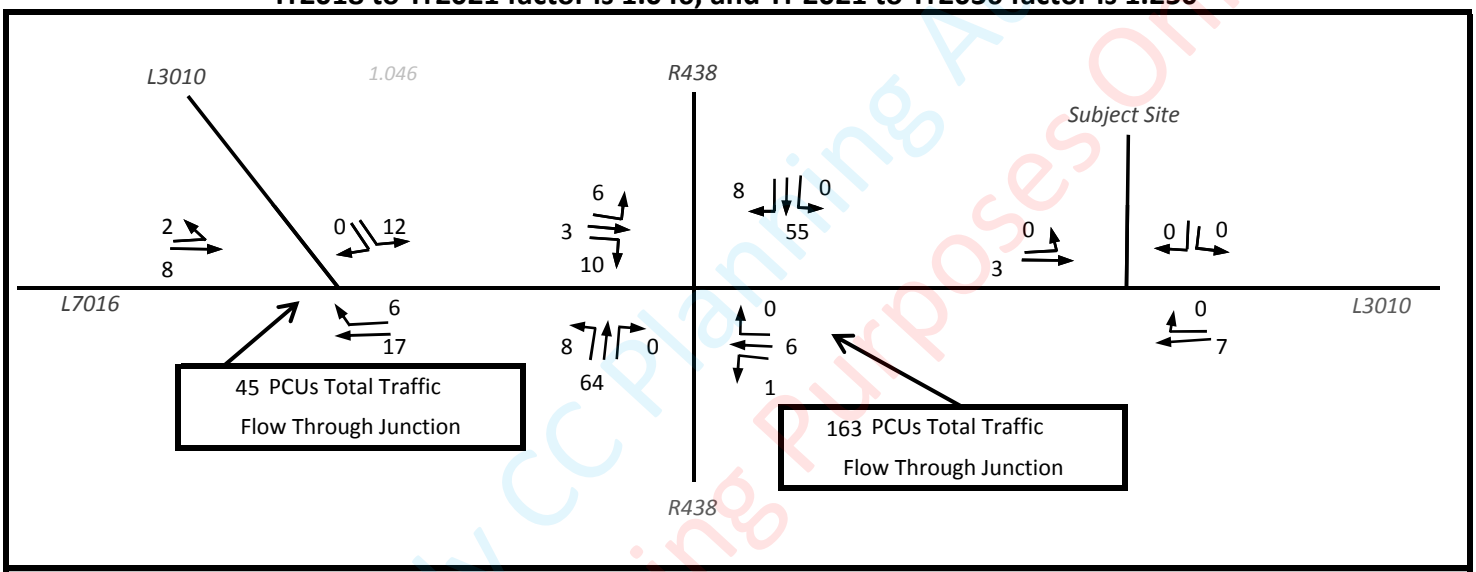


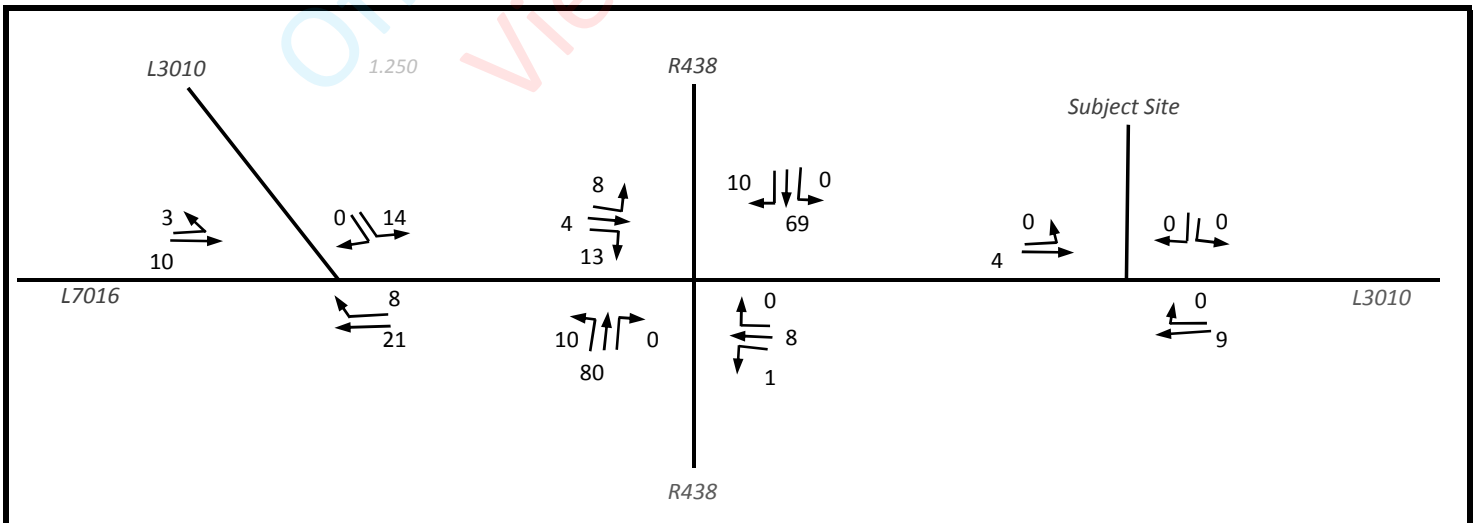
Existing Traffic Flow Local Network (PCUs)
AM Peak Hour (0800-0900H) 2018 - Without Any Development on Subject Site

2018 SURVEYED TRAFFIC FLOWS WEEKDAY AM PEAK HOUR

Tii Project Appraisal Guidelines Unit 5.3 (Travel Demand Projections Table 5.3.2) for Offaly, Yr2018 to Yr2021 factor is 1.046, and Yr 2021 to Yr2036 factor is 1.250



Projected Traffic Flow on Local Network (PCUs) Selected Opening Year
AM Peak Hour (0800-0900H) 2021 - Without Any Development on Subject Site



Projected Traffic Flow on Local Network (PCUs) Selected Design Year (Opening Yr +15)
AM Peak Hour (0800-0900H) 2036 - Without Any Development on Subject Site

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Proposed Development - Traffic Generation Calculations.

Plant Production and Activities - Daily Movements

Description	Number	Vehicle Type (axles)	PCU Factor	One-Way Equiv PCU/Day
Cattle Deliveries Per Day*	2	3	2.5	5
	2	3	2.5	5
	5	2	2	10
	15	2	2	30
Meat Products Out*	5	5	3	15
Waste Out*	3	2	2.5	7.5
Sludge Removal*	1	2	2.5	2.5
Visitors	10	2	1	6
Chemical Deliveries/Fuel - per Mth	3	3	2.5	Negligible
Production Staff 7am to 5pm	80	2	1	44
Administration Staff 9am-5pm	20	2	1	11
Cleaning Staff (5pm Start)	10	2	1	6
Total Equivalent One-Way PCUs Generated per Day				***142***
Total Equivalent 2-WAY Annual Average Daily Traffic Generated by Facility (PCUs)				***283***

Equivalent WORST CASE Peak Hour Arrivals and Departures

Hour	Arrivals	Departures	2-Way
Weekday AM Peak Hour (8-9am)	21	10	31
Weekday PM Peak Hour (5-6pm)	15	66	81

**** Assuming all Non-Staff Vehicles are equally distributed over an 8hr Day for the purposes of Robustness***

***** ONLY Admin Staff Arrive in the Traditional AM Peak Hr for purposes of Robustness***

Explanatory Breakdown of Weekday AM Peak Hour 8-9am Arrivals and Departures

8-9am Arrivals Breakdown	
Vehicle Types	**Per Day**
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	6
Equivalent PCUs/Hr (Total of Above/8)	**10**
Plus Admin Staff Vehicles 8-9am	11
Total 8-9am PCU Arrivals	**21**

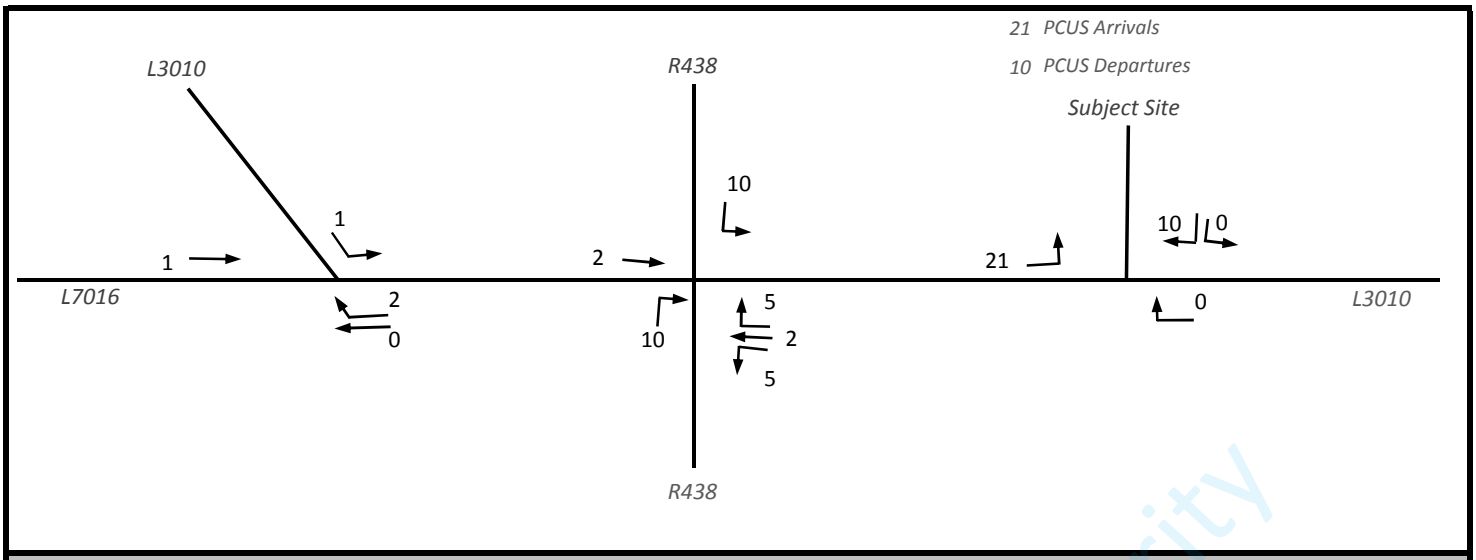
8-9am Departures Breakdown	
Vehicle Types	**Per Day**
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	6
Equivalent PCUs/Hr (Total of Above/8)	**10**
Zero Staff Vehicles Leave 8-9am	0
Total 8-9am PCU Departuress	**10**

Explanatory Breakdown of Weekday PM Peak Hour 5-6pm Arrivals and Departures

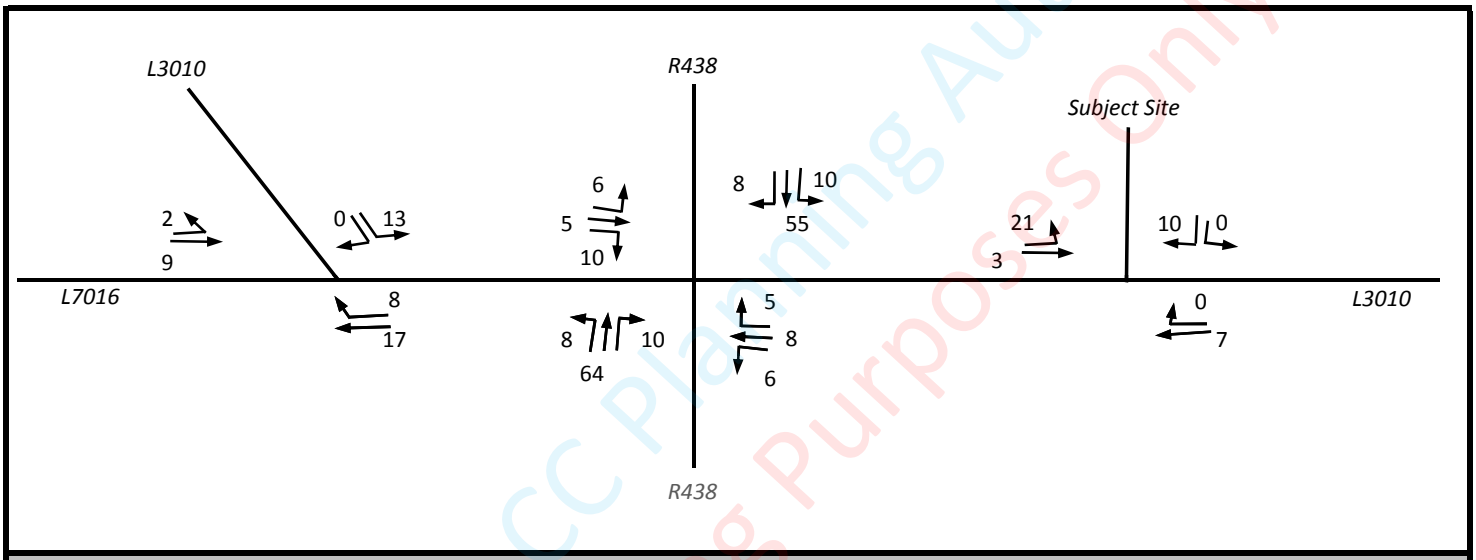
5-6pm Arrivals Breakdown	
Vehicle Types	**Per Day**
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	**6**
Equivalent PCUs/Hr (Total of Above/8)	**9**
Plus Cleaning Staff Arrivals 5-6pm	6
Total 5-6pm PCU Arrivals	**15**

5-6pm Departures Breakdown	
Vehicle Types	**Per Day**
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	**6**
Equivalent PCUs/Hr (Above/8)	**10**
Production Staff Departures 5-6pm	44
Admin Staff Departures 5-6pm	11
Total 8-9am PCU Departuress	**66**

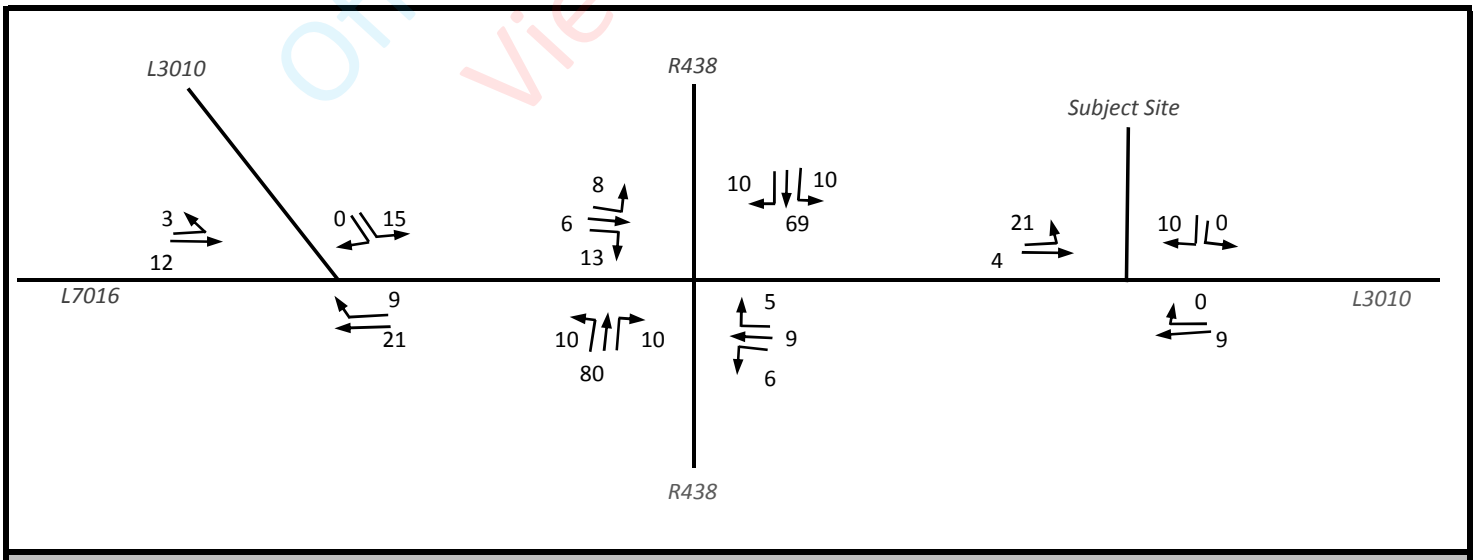
Offaly CC Planning Authority
Viewing Purposes Only.



ASSIGNMENT OF WEEKDAY AM PEAK HOUR WORST CASE DEVELOPMENT TRAFFIC ONLY
DEVELOPMENT COMPLETED AND OPERATIONAL (8-9am)

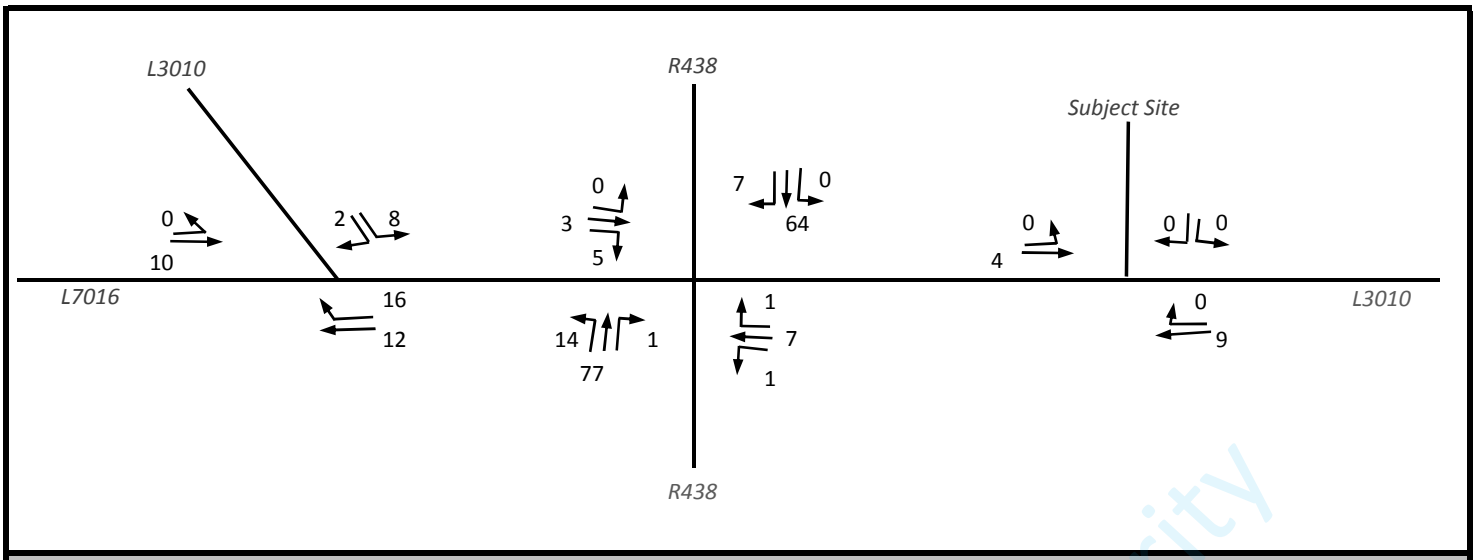


Projected Traffic Flow on Local Network (PCUs) Selected Opening Year
AM Peak Hour (0800-0900H) 2021 - WITH Proposed Development Fully Operational



Projected Traffic Flow on Local Network (PCUs) Selected Design Year (Opening Yr + 15)
AM Peak Hour (0800-0900H) 2036 - WITH Proposed Development Fully Operational

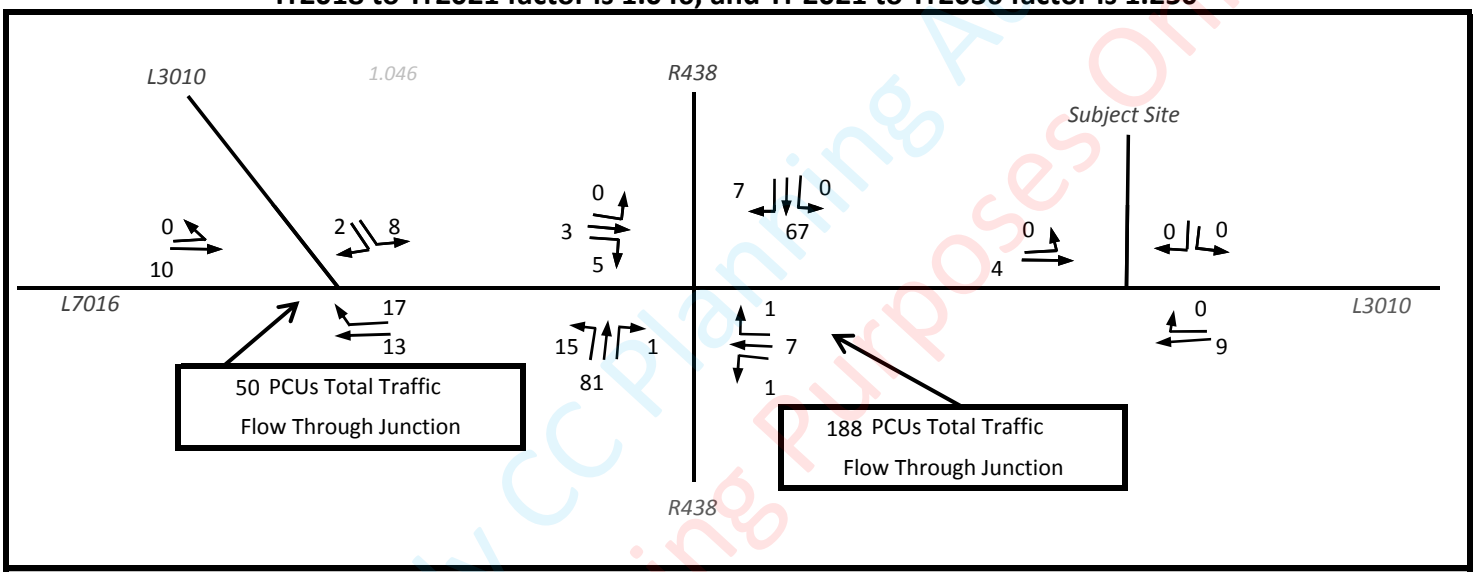
Offaly CC Planning Authority
Viewing Purposes Only.



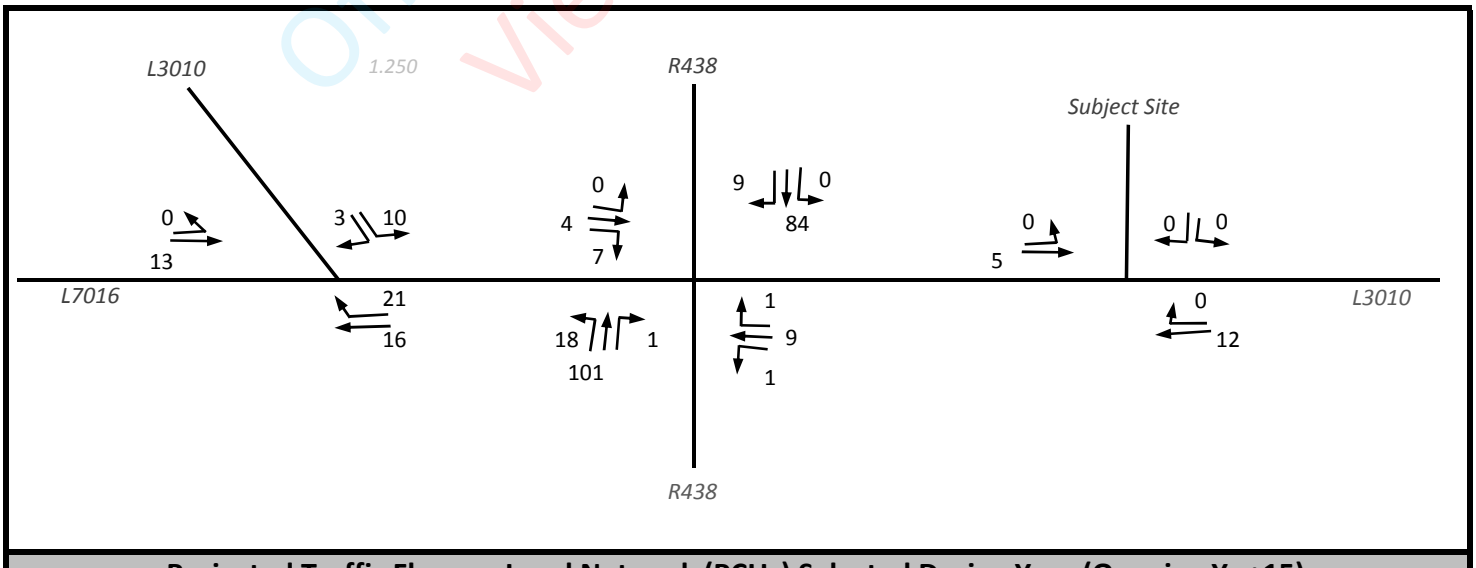
Existing Traffic Flow Local Network (PCUs)
PM Peak Hour (1700-1800H) 2018 - Without Any Development on Subject Site

2018 SURVEYED TRAFFIC FLOWS WEEKDAY PM PEAK HOUR

Tii Project Appraisal Guidelines Unit 5.3 (Travel Demand Projections Table 5.3.2) for Offaly, Yr2018 to Yr2021 factor is 1.046, and Yr 2021 to Yr2036 factor is 1.250



Projected Traffic Flow on Local Network (PCUs) Selected Opening Year
PM Peak Hour (1700-1800H) 2021 - Without Any Development on Subject Site



Projected Traffic Flow on Local Network (PCUs) Selected Design Year (Opening Yr +15)
PM Peak Hour (1700-1800H) 2036 - Without Any Development on Subject Site

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Proposed Development - Traffic Generation Calculations.

Plant Production and Activities - Daily Movements

Description	Number	Vehicle Type (axles)	PCU Factor	One-Way Equiv PCU/Day
Cattle Deliveries Per Day*	2	3	2.5	5
	2	3	2.5	5
	5	2	2	10
	15	2	2	30
Meat Products Out*	5	5	3	15
Waste Out*	3	2	2.5	7.5
Sludge Removal*	1	2	2.5	2.5
Visitors	10	2	1	6
Chemical Deliveries/Fuel - per Mth	3	3	2.5	Negligible
Production Staff 7am to 5pm	80	2	1	44
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Total Equivalent One-Way PCUs Generated per Day				***142***
Total Equivalent 2-WAY Annual Average Daily Traffic Generated by Facility (PCUs)				***283***

Equivalent WORST CASE Peak Hour Arrivals and Departures

Hour	Arrivals	Departures	2-Way
Weekday AM Peak Hour (8-9am)	21	10	31
Weekday PM Peak Hour (5-6pm)	15	66	81

**** Assuming all Non-Staff Vehicles are equally distributed over an 8hr Day for the purposes of Robustness***

***** ONLY Admin Staff Arrive in the Traditional AM Peak Hr for purposes of Robustness***

8-9am Arrivals Breakdown

Vehicle Types	Per Day
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	6
Equivalent PCUs/Hr (Total of Above/8)	**10**
Plus Admin Staff Vehicles 8-9am	11
Total 8-9am PCU Arrivals	**21**

Explanatory Breakdown of Weekday AM Peak Hour 8-9am Arrivals and Departures

8-9am Departures Breakdown

Vehicle Types	Per Day
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	6
Equivalent PCUs/Hr (Total of Above/8)	**10**
Zero Staff Vehicles Leave 8-9am	0
Total 8-9am PCU Departuress	**10**

5-6pm Arrivals Breakdown

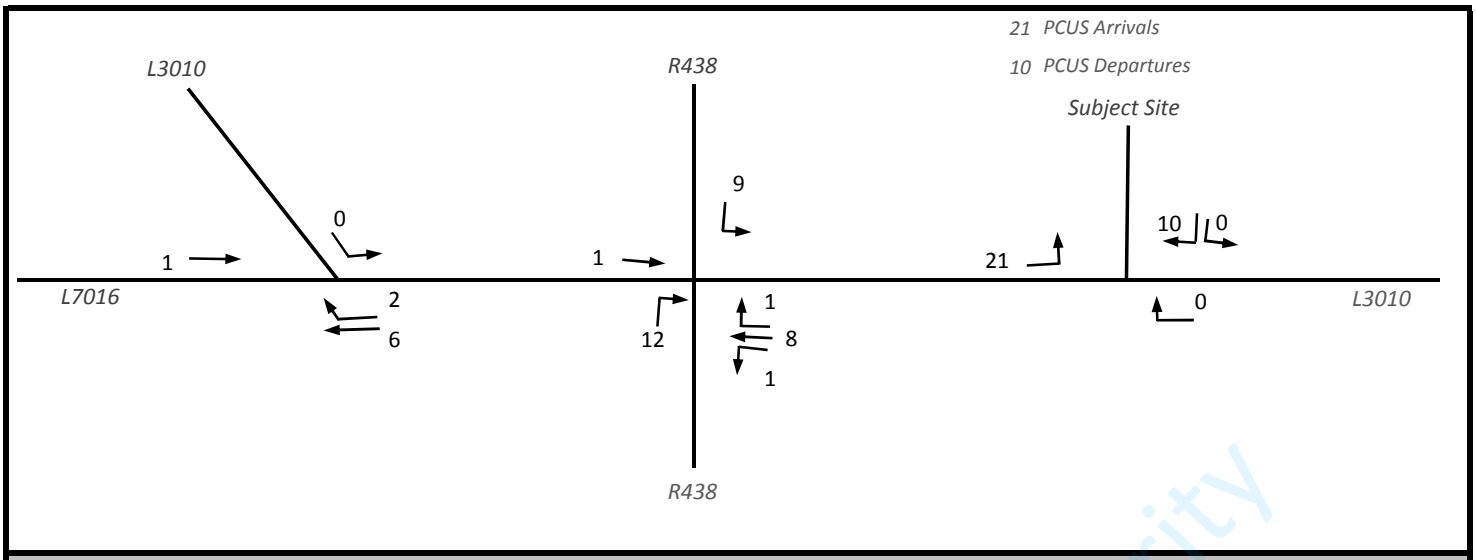
Vehicle Types	Per Day
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	**6**
Equivalent PCUs/Hr (Total of Above/8)	**9**
Plus Cleaning Staff Arrivals 5-6pm	6
Total 5-6pm PCU Arrivals	**15**

Explanatory Breakdown of Weekday PM Peak Hour 5-6pm Arrivals and Departures

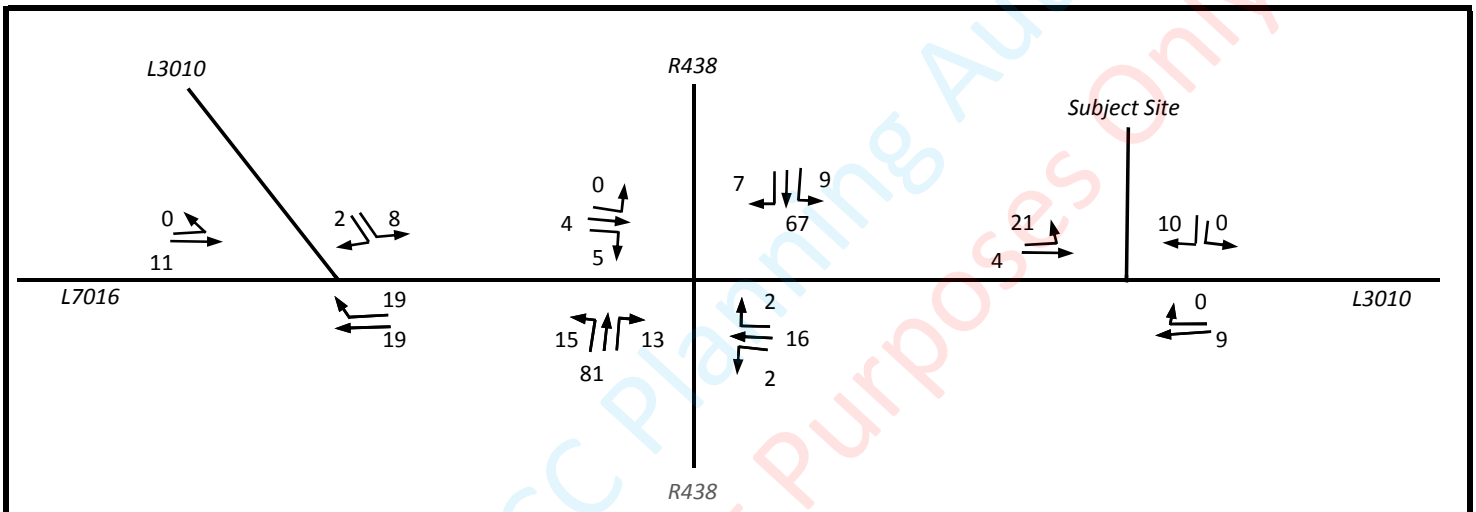
5-6pm Departures Breakdown

Vehicle Types	Per Day
Cattle Deliveries Per Day*	5
	5
	10
	30
Meat Products	15
Waste Products	7.5
Sludge Removal	2.5
Visitors	**6**
Equivalent PCUs/Hr (Above/8)	**10**
Production Staff Departures 5-6pm	44
Admin Staff Departures 5-6pm	11
Total 8-9am PCU Departuress	**66**

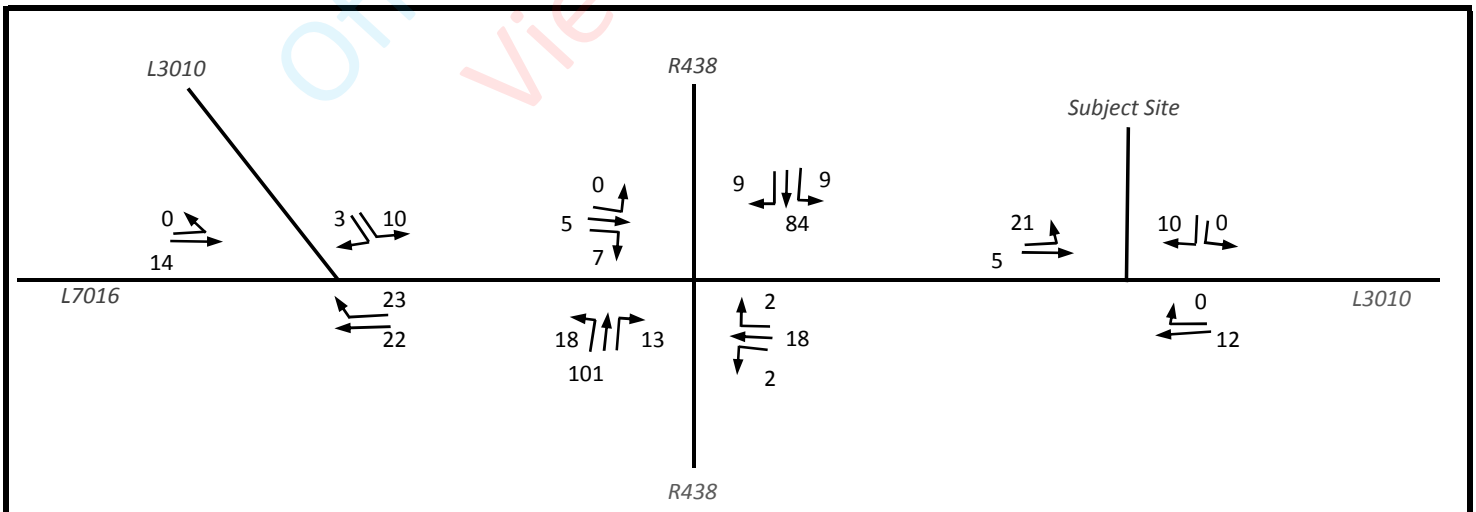
Offaly CC Planning Authority Viewing Purposes Only.



ASSIGNMENT OF WEEKDAY PM PEAK HOUR WORST CASE DEVELOPMENT TRAFFIC ONLY
DEVELOPMENT COMPLETED AND OPERATIONAL (5-6pm)



Projected Traffic Flow on Local Network (PCUs) Selected Opening Year
PM Peak Hour (1700-1800H) 2021 - WITH Proposed Development Fully Operational



Projected Traffic Flow on Local Network (PCUs) Selected Design Year (Opening Yr + 15)
PM Peak Hour (1700-1800H) 2036 - WITH Proposed Development Fully Operational

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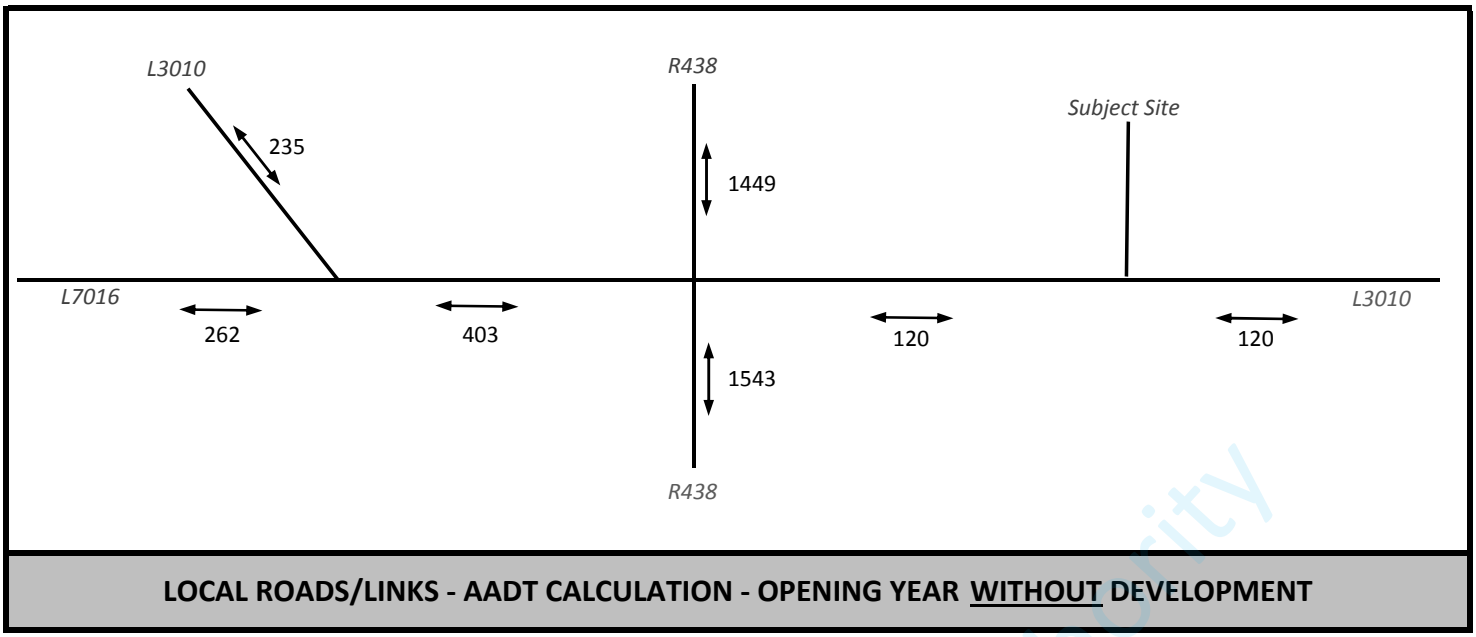
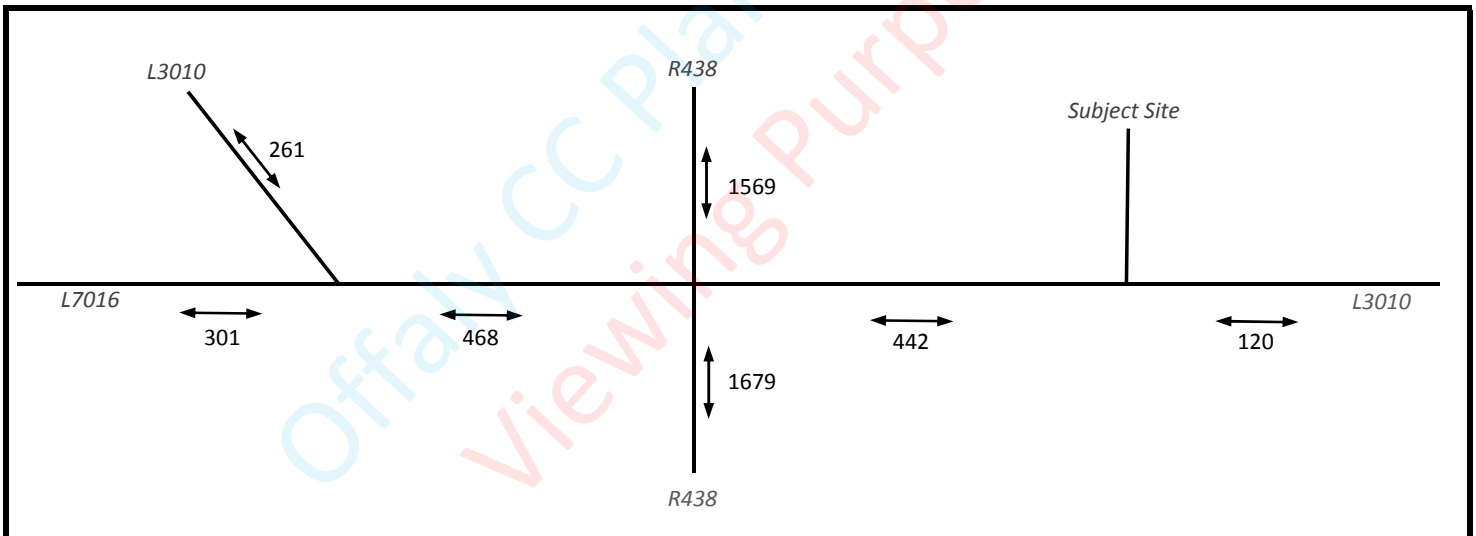


LOCAL ROADS/LINKS - AADT CALCULATION - OPENING YEAR WITHOUT DEVELOPMENT

For Percentage HGVs Refer to Traffic Survey Output Data



LOCAL ROADS/LINKS - AADT CALCULATION - OPENING YEAR WITH DEVELOPMENT

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APPENDIX D

Junctions9 Picady Model Output
Proposed Site Access

Proposed Development - L3010/Site Access Junction
Summary 'Junctions-9' PiCADY Results, Robust & Worst Case

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
Opening Year 2021 AM Peak Hr	<1	0.02
Opening Year 2021 PM Peak Hr	<1	0.13
Design Year 2036 AM Peak Hr	<1	0.27
Design Year 2036 PM Peak Hr	<1	0.27

RESULTS CONFIRM ALL WORST CASE RFCs < AVAILABLE CAPACITY
(In PiCADY, Junctions are considered nearing capacity when RFC reaches 0.85)

The Assessment Clearly Demonstrates that No problems whatsover are expected at the Junction as all RFCs are WAY BELOW capacity, with the Entire Subject Scheme Fully Opened & Operational.

It should be Noted that, in light of the Favourable Results Above, any changes of 2-3 years in the Selection of Opening OR Design Year, or indeed a Phased Construction or Operation of the Development, is unlikely to have Any Impact Whatsoever on the Conclusions.

Offaly County Council Planning Authority
For Viewing Purposes Only.

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: 2021 AM PM.j9
Path: N:\01 Projects\2018\18-101 Banagher Access\Calculations\Site Access Picady
Report generation date: 20/03/2019 11:41:33

»2021, AM
»2021, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2021							
Stream B-AC	0.0	8.36	0.02	A	0.2	9.45	0.13	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/03/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021	AM	ONE HOUR	07:45	09:15	15
D2	2021	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Abbitoir Access	T-Junction	Two-way	1.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	L3010 N		Major
B	Site Access		Minor
C	L3010 S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	23	100.000
B		✓	9	100.000
C		✓	7	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	20	3
	B	9	0	0
	C	7	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	25	0
	B	25	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.02	8.36	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	549	0.012	7	0.0	8.293	A
C-AB	0	1244	0.000	0	0.0	0.000	A
C-A	5			5			
A-B	15			15			
A-C	2			2			

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08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	8	549	0.015	8	0.0	8.324	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	6			6			
A-B	18			18			
A-C	3			3			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	548	0.018	10	0.0	8.364	A
C-AB	0	1240	0.000	0	0.0	0.000	A
C-A	8			8			
A-B	22			22			
A-C	3			3			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	548	0.018	10	0.0	8.364	A
C-AB	0	1240	0.000	0	0.0	0.000	A
C-A	8			8			
A-B	22			22			
A-C	3			3			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	8	549	0.015	8	0.0	8.326	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	6			6			
A-B	18			18			
A-C	3			3			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	549	0.012	7	0.0	8.297	A
C-AB	0	1244	0.000	0	0.0	0.000	A
C-A	5			5			
A-B	15			15			
A-C	2			2			

Offsay CC Planning Authority Viewing Purposes Only.

2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Abbitoir Access	T-Junction	Two-way	6.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2021	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	19	100.000
B		✓	65	100.000
C		✓	9	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	15	4
	B	65	0	0
	C	9	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	25	0
	B	25	0	0
	C	0	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.13	9.45	0.2	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	49	549	0.089	48	0.1	8.979	A
C-AB	0	1245	0.000	0	0.0	0.000	A
C-A	7			7			
A-B	11			11			
A-C	3			3			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	58	549	0.107	58	0.1	9.176	A
C-AB	0	1244	0.000	0	0.0	0.000	A
C-A	8			8			
A-B	13			13			
A-C	4			4			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	72	548	0.131	71	0.2	9.442	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	10			10			
A-B	17			17			
A-C	4			4			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	72	548	0.131	72	0.2	9.448	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	10			10			
A-B	17			17			
A-C	4			4			

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17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	58	549	0.107	59	0.2	9.187	A
C-AB	0	1244	0.000	0	0.0	0.000	A
C-A	8			8			
A-B	13			13			
A-C	4			4			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	49	549	0.089	49	0.1	8.999	A
C-AB	0	1245	0.000	0	0.0	0.000	A
C-A	7			7			
A-B	11			11			
A-C	3			3			

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: 2036 AM PM.j9
Path: N:\01 Projects\2018\18-101 Banagher Access\Calculations\Site Access Picady
Report generation date: 20/03/2019 11:44:45

»2036, AM
»2036, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2036							
Stream B-AC	0.0	8.37	0.02	A	0.2	9.46	0.13	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/03/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2036	AM	ONE HOUR	07:45	09:15	15
D2	2036	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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2036, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Abbitoir Access	T-Junction	Two-way	1.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	L3010 N		Major
B	Site Access		Minor
C	L3010 S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2036	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	24	100.000
B		✓	9	100.000
C		✓	9	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	20	4
	B	9	0	0
	C	9	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	25	0
	B	25	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.02	8.37	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	549	0.012	7	0.0	8.300	A
C-AB	0	1243	0.000	0	0.0	0.000	A
C-A	7			7			
A-B	15			15			
A-C	3			3			

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08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	8	548	0.015	8	0.0	8.331	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	8			8			
A-B	18			18			
A-C	4			4			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	547	0.018	10	0.0	8.374	A
C-AB	0	1239	0.000	0	0.0	0.000	A
C-A	10			10			
A-B	22			22			
A-C	4			4			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	547	0.018	10	0.0	8.374	A
C-AB	0	1239	0.000	0	0.0	0.000	A
C-A	10			10			
A-B	22			22			
A-C	4			4			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	8	548	0.015	8	0.0	8.332	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	8			8			
A-B	18			18			
A-C	4			4			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	549	0.012	7	0.0	8.303	A
C-AB	0	1243	0.000	0	0.0	0.000	A
C-A	7			7			
A-B	15			15			
A-C	3			3			

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2036, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Abbitoir Access	T-Junction	Two-way	6.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2036	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	20	100.000
B		✓	65	100.000
C		✓	12	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	15	5
	B	65	0	0
	C	12	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	25	0
	B	25	0	0
	C	0	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.13	9.46	0.2	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	49	549	0.089	48	0.1	8.989	A
C-AB	0	1245	0.000	0	0.0	0.000	A
C-A	9			9			
A-B	11			11			
A-C	4			4			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	58	548	0.107	58	0.1	9.188	A
C-AB	0	1243	0.000	0	0.0	0.000	A
C-A	11			11			
A-B	13			13			
A-C	4			4			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	72	547	0.131	71	0.2	9.459	A
C-AB	0	1241	0.000	0	0.0	0.000	A
C-A	13			13			
A-B	17			17			
A-C	6			6			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	72	547	0.131	72	0.2	9.464	A
C-AB	0	1241	0.000	0	0.0	0.000	A
C-A	13			13			
A-B	17			17			
A-C	6			6			

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17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	58	548	0.107	59	0.2	9.197	A
C-AB	0	1243	0.000	0	0.0	0.000	A
C-A	11			11			
A-B	13			13			
A-C	4			4			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	49	549	0.089	49	0.1	9.008	A
C-AB	0	1245	0.000	0	0.0	0.000	A
C-A	9			9			
A-B	11			11			
A-C	4			4			

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APPENDIX E

Junctions9 Picady Model Output - L3010/L7016 Offset T Junction

Proposed Development - L3010/L7016 Priority Controlled Junction
Summary 'Junctions-9' PiCADY Results, Robust & Worst Case

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
Opening Year 2021 AM Peak Hr	<1	0.02
Opening Year 2021 PM Peak Hr	<1	0.05
Design Year 2036 AM Peak Hr	<1	0.02
Design Year 2036 PM Peak Hr	<1	0.06

RESULTS CONFIRM ALL WORST CASE RFCs < AVAILABLE CAPACITY
(In PiCADY, Junctions are considered nearing capacity when RFC reaches 0.85)

The Assessment Clearly Demonstrates that No problems whatsover are expected at the Junction as all RFCs are WAY BELOW capacity, with the Entire Subject Scheme Fully Opened & Operational.

It should be Noted that, in light of the Favourable Results Above, any changes of 2-3 years in the Selection of Opening OR Design Year, or indeed a Phased Construction or Operation of the Development, is unlikely to have Any Impact Whatsoever on the Conclusions.

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Junctions 9

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Filename: 2021 AM PM.j9
Path: N:\01 Projects\2018\18-101 Banagher Access\Calculations\Local Roads T Junction Picady
Report generation date: 20/03/2019 11:52:44

»2021, AM
»2021, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2021							
Stream B-AC	0.0	5.70	0.02	A	0.0	6.00	0.02	A
Stream C-AB	0.0	6.15	0.01	A	0.1	6.38	0.05	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/03/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021	AM	ONE HOUR	07:45	09:15	15
D2	2021	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Local Road L3010 L7016 T Junc	T-Junction	Two-way	2.52	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	L7016 N		Major
B	L3010		Minor
C	L7016 S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	11	100.000
B		✓	13	100.000
C		✓	25	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	9
	B	0	0	13
	C	17	8	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.02	5.70	0.0	A
C-AB	0.01	6.15	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	679	0.014	10	0.0	5.650	A
C-AB	6	624	0.010	6	0.0	6.113	A
C-A	13			13			
A-B	2			2			
A-C	7			7			

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08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	12	678	0.017	12	0.0	5.670	A
C-AB	7	624	0.012	7	0.0	6.128	A
C-A	15			15			
A-B	2			2			
A-C	8			8			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	14	678	0.021	14	0.0	5.696	A
C-AB	9	623	0.014	9	0.0	6.149	A
C-A	19			19			
A-B	2			2			
A-C	10			10			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	14	678	0.021	14	0.0	5.696	A
C-AB	9	623	0.014	9	0.0	6.149	A
C-A	19			19			
A-B	2			2			
A-C	10			10			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	12	678	0.017	12	0.0	5.670	A
C-AB	7	624	0.012	7	0.0	6.131	A
C-A	15			15			
A-B	2			2			
A-C	8			8			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	679	0.014	10	0.0	5.653	A
C-AB	6	624	0.010	6	0.0	6.113	A
C-A	13			13			
A-B	2			2			
A-C	7			7			

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2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Local Road L3010 L7016 T Junc	T-Junction	Two-way	2.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2021	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	11	100.000
B		✓	10	100.000
C		✓	80	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	11
	B	2	0	8
	C	49	31	0

Vehicle Mix

HV %s

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

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.02	6.00	0.0	A
C-AB	0.05	6.38	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	8	644	0.012	7	0.0	5.937	A
C-AB	23	626	0.037	23	0.0	6.272	A
C-A	37			37			
A-B	0			0			
A-C	8			8			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	9	643	0.014	9	0.0	5.962	A
C-AB	28	626	0.045	28	0.0	6.320	A
C-A	44			44			
A-B	0			0			
A-C	10			10			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	641	0.017	11	0.0	5.998	A
C-AB	34	627	0.055	34	0.1	6.382	A
C-A	54			54			
A-B	0			0			
A-C	12			12			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	641	0.017	11	0.0	5.998	A
C-AB	34	627	0.055	34	0.1	6.382	A
C-A	54			54			
A-B	0			0			
A-C	12			12			

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17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	9	643	0.014	9	0.0	5.965	A
C-AB	28	626	0.045	28	0.0	6.323	A
C-A	44			44			
A-B	0			0			
A-C	10			10			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	8	644	0.012	8	0.0	5.937	A
C-AB	23	626	0.037	23	0.0	6.278	A
C-A	37			37			
A-B	0			0			
A-C	8			8			

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Junctions 9

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Filename: 2036 AM PM.j9
Path: N:\01 Projects\2018\18-101 Banagher Access\Calculations\Local Roads T Junction Picady
Report generation date: 20/03/2019 11:49:53

»2036, AM
»2036, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2036							
Stream B-AC	0.0	5.72	0.02	A	0.0	6.10	0.02	A
Stream C-AB	0.0	6.17	0.02	A	0.1	6.43	0.06	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/03/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2036	AM	ONE HOUR	07:45	09:15	15
D2	2036	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Offaly CC Planning Authority
Viewing Purposes Only.

2036, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Local Road L3010 L7016 T Junc	T-Junction	Two-way	2.40	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	L7016 N		Major
B	L3010		Minor
C	L7016 S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2036	AM	ONE HOUR	07:45	09:15	15

Offaly CC Planning Authority
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Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	14	100.000
B		✓	15	100.000
C		✓	30	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	3	11
	B	0	0	15
	C	21	9	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.02	5.72	0.0	A
C-AB	0.02	6.17	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	678	0.017	11	0.0	5.667	A
C-AB	7	624	0.011	7	0.0	6.126	A
C-A	16			16			
A-B	2			2			
A-C	8			8			

Offaly Co. Planning Authority Viewing Purposes Only.

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	13	678	0.020	13	0.0	5.690	A
C-AB	8	623	0.013	8	0.0	6.143	A
C-A	19			19			
A-B	3			3			
A-C	10			10			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	17	677	0.024	16	0.0	5.721	A
C-AB	10	623	0.016	10	0.0	6.166	A
C-A	23			23			
A-B	3			3			
A-C	12			12			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	17	677	0.024	17	0.0	5.721	A
C-AB	10	623	0.016	10	0.0	6.166	A
C-A	23			23			
A-B	3			3			
A-C	12			12			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	13	678	0.020	14	0.0	5.690	A
C-AB	8	623	0.013	8	0.0	6.143	A
C-A	19			19			
A-B	3			3			
A-C	10			10			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	678	0.017	11	0.0	5.667	A
C-AB	7	624	0.011	7	0.0	6.128	A
C-A	16			16			
A-B	2			2			
A-C	8			8			

Offaly CC Planning Authority Viewing Purposes Only.

2036, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Local Road L3010 L7016 T Junc	T-Junction	Two-way	2.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2036	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	14	100.000
B		✓	13	100.000
C		✓	88	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	14
	B	3	0	10
	C	53	35	0

Vehicle Mix

HV %s

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

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.02	6.10	0.0	A
C-AB	0.06	6.43	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	638	0.015	10	0.0	6.016	A
C-AB	26	625	0.042	26	0.0	6.306	A
C-A	40			40			
A-B	0			0			
A-C	11			11			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	12	636	0.018	12	0.0	6.049	A
C-AB	32	626	0.051	32	0.1	6.360	A
C-A	48			48			
A-B	0			0			
A-C	13			13			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	14	634	0.023	14	0.0	6.096	A
C-AB	39	626	0.062	39	0.1	6.431	A
C-A	58			58			
A-B	0			0			
A-C	15			15			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	14	634	0.023	14	0.0	6.096	A
C-AB	39	626	0.062	39	0.1	6.431	A
C-A	58			58			
A-B	0			0			
A-C	15			15			

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17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	12	636	0.018	12	0.0	6.050	A
C-AB	32	626	0.051	32	0.1	6.361	A
C-A	48			48			
A-B	0			0			
A-C	13			13			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	10	638	0.015	10	0.0	6.016	A
C-AB	26	625	0.042	26	0.0	6.312	A
C-A	40			40			
A-B	0			0			
A-C	11			11			

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APPENDIX D

Junctions9 Picady Model Output
Proposed Site Access

Proposed Development - L3010/Site Access Junction
Summary 'Junctions-9' PiCADY Results, Robust & Worst Case

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
Opening Year 2021 AM Peak Hr	<1	0.02
Opening Year 2021 PM Peak Hr	<1	0.13
Design Year 2036 AM Peak Hr	<1	0.27
Design Year 2036 PM Peak Hr	<1	0.27

RESULTS CONFIRM ALL WORST CASE RFCs < AVAILABLE CAPACITY
(In PiCADY, Junctions are considered nearing capacity when RFC reaches 0.85)

The Assessment Clearly Demonstrates that No problems whatsover are expected at the Junction as all RFCs are WAY BELOW capacity, with the Entire Subject Scheme Fully Opened & Operational.

It should be Noted that, in light of the Favourable Results Above, any changes of 2-3 years in the Selection of Opening OR Design Year, or indeed a Phased Construction or Operation of the Development, is unlikely to have Any Impact Whatsoever on the Conclusions.

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: 2021 AM PM.j9
Path: N:\01 Projects\2018\18-101 Banagher Access\Calculations\Crossroads Picady
Report generation date: 20/03/2019 12:04:38

»2021, AM
»2021, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2021							
Stream B-ACD	0.0	7.18	0.04	A	0.0	7.73	0.02	A
Stream A-BCD	0.0	6.32	0.02	A	0.0	6.34	0.02	A
Stream D-ABC	0.0	7.08	0.03	A	0.2	8.58	0.16	A
Stream C-ABD	0.0	6.34	0.01	A	0.0	6.40	0.01	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/03/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021	AM	ONE HOUR	07:45	09:15	15
D2	2021	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Boherdurrow Crossroads	Crossroads	Two-way	1.98	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R438 West		Major
B	L7016		Minor
C	R438 East		Major
D	L3010 to Site		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.00			90.0	✓	1.00
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90
D	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	626	-	-	-	-	-	-	0.243	0.347	0.243	-	-	-
1	B-A	552	0.101	0.254	0.254	-	-	-	0.160	0.363	-	0.254	0.254	0.127
1	B-C	681	0.104	0.264	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	552	0.101	0.254	0.254	-	-	-	0.160	0.363	0.160	-	-	-
1	B-D, offside lane	552	0.101	0.254	0.254	-	-	-	0.160	0.363	0.160	-	-	-
1	C-B	626	0.243	0.243	0.347	-	-	-	-	-	-	-	-	-
1	D-A	681	-	-	-	-	-	-	0.264	-	0.104	-	-	-
1	D-B, nearside lane	552	0.160	0.160	0.363	-	-	-	0.254	0.254	0.101	-	-	-
1	D-B, offside lane	552	0.160	0.160	0.363	-	-	-	0.254	0.254	0.101	-	-	-
1	D-C	552	-	0.160	0.363	0.127	0.254	0.254	0.254	0.254	0.101	-	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	81	100.000
B		✓	21	100.000
C		✓	72	100.000
D		✓	17	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	8	64	9
	B	10	0	6	5
	C	55	8	0	9
	D	5	8	4	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-ACD	0.04	7.18	0.0	A
A-BCD	0.02	6.32	0.0	A
A-B				
A-C				
D-ABC	0.03	7.08	0.0	A
C-ABD	0.01	6.34	0.0	A
C-D				
C-A				

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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	16	560	0.028	16	0.0	6.938	A
A-BCD	7	613	0.011	7	0.0	6.234	A
A-B	6			6			
A-C	48			48			
D-ABC	13	563	0.023	13	0.0	6.874	A
C-ABD	6	611	0.010	6	0.0	6.245	A
C-D	7			7			
C-A	41			41			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	19	556	0.034	19	0.0	7.040	A
A-BCD	8	611	0.013	8	0.0	6.272	A
A-B	7			7			
A-C	58			58			
D-ABC	15	558	0.027	15	0.0	6.960	A
C-ABD	7	608	0.012	7	0.0	6.286	A
C-D	8			8			
C-A	49			49			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	23	549	0.042	23	0.0	7.181	A
A-BCD	10	607	0.016	10	0.0	6.324	A
A-B	9			9			
A-C	70			70			
D-ABC	19	552	0.034	19	0.0	7.083	A
C-ABD	9	605	0.015	9	0.0	6.343	A
C-D	10			10			
C-A	61			61			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	23	549	0.042	23	0.0	7.182	A
A-BCD	10	607	0.016	10	0.0	6.325	A
A-B	9			9			
A-C	70			70			
D-ABC	19	552	0.034	19	0.0	7.083	A
C-ABD	9	605	0.015	9	0.0	6.343	A
C-D	10			10			
C-A	61			61			

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08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	19	556	0.034	19	0.0	7.041	A
A-BCD	8	611	0.013	8	0.0	6.275	A
A-B	7			7			
A-C	58			58			
D-ABC	15	558	0.027	15	0.0	6.964	A
C-ABD	7	608	0.012	7	0.0	6.287	A
C-D	8			8			
C-A	49			49			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	16	560	0.028	16	0.0	6.945	A
A-BCD	7	613	0.011	7	0.0	6.236	A
A-B	6			6			
A-C	48			48			
D-ABC	13	563	0.023	13	0.0	6.875	A
C-ABD	6	611	0.010	6	0.0	6.248	A
C-D	7			7			
C-A	41			41			

Offaly CC Planning Authority
Viewing Purposes Only.

2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Boherdurrow Crossroads	Crossroads	Two-way	3.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2021	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	105	100.000
B		✓	9	100.000
C		✓	80	100.000
D		✓	75	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	15	81	9
	B	5	0	0	4
	C	67	7	0	6
	D	8	59	8	0

Vehicle Mix

HV %s

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

Offaly CC Planning Authority
Viewing Purposes Only.

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-ACD	0.02	7.73	0.0	A
A-BCD	0.02	6.34	0.0	A
A-B				
A-C				
D-ABC	0.16	8.58	0.2	A
C-ABD	0.01	6.40	0.0	A
C-D				
C-A				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	7	516	0.013	7	0.0	7.423	A
A-BCD	7	612	0.011	7	0.0	6.245	A
A-B	11			11			
A-C	61			61			
D-ABC	56	536	0.105	56	0.1	7.868	A
C-ABD	5	607	0.009	5	0.0	6.283	A
C-D	5			5			
C-A	50			50			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	8	509	0.016	8	0.0	7.549	A
A-BCD	8	609	0.013	8	0.0	6.285	A
A-B	13			13			
A-C	73			73			
D-ABC	67	530	0.127	67	0.2	8.159	A
C-ABD	6	603	0.010	6	0.0	6.332	A
C-D	5			5			
C-A	60			60			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	10	499	0.020	10	0.0	7.729	A
A-BCD	10	606	0.016	10	0.0	6.340	A
A-B	17			17			
A-C	89			89			
D-ABC	83	523	0.158	82	0.2	8.574	A
C-ABD	8	598	0.013	8	0.0	6.400	A
C-D	7			7			
C-A	74			74			

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17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	10	499	0.020	10	0.0	7.729	A
A-BCD	10	606	0.016	10	0.0	6.340	A
A-B	17			17			
A-C	89			89			
D-ABC	83	523	0.158	83	0.2	8.581	A
C-ABD	8	598	0.013	8	0.0	6.400	A
C-D	7			7			
C-A	74			74			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	8	509	0.016	8	0.0	7.553	A
A-BCD	8	609	0.013	8	0.0	6.288	A
A-B	13			13			
A-C	73			73			
D-ABC	67	530	0.127	68	0.2	8.170	A
C-ABD	6	603	0.010	6	0.0	6.332	A
C-D	5			5			
C-A	60			60			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	7	516	0.013	7	0.0	7.428	A
A-BCD	7	612	0.011	7	0.0	6.248	A
A-B	11			11			
A-C	61			61			
D-ABC	56	536	0.105	57	0.1	7.888	A
C-ABD	5	607	0.009	5	0.0	6.283	A
C-D	5			5			
C-A	50			50			

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: 2036 AM PM.j9
Path: N:\01 Projects\2018\18-101 Banagher Access\Calculations\Crossroads Picady
Report generation date: 20/03/2019 12:09:11

»2036, AM
»2036, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2036							
Stream B-ACD	0.1	7.36	0.05	A	0.0	7.96	0.03	A
Stream A-BCD	0.0	6.37	0.02	A	0.0	6.40	0.02	A
Stream D-ABC	0.0	7.17	0.04	A	0.2	8.80	0.16	A
Stream C-ABD	0.0	6.41	0.02	A	0.0	6.49	0.02	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/03/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

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Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2036	AM	ONE HOUR	07:45	09:15	15
D2	2036	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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2036, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Boherdurrow Crossroads	Crossroads	Two-way	1.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R438 West		Major
B	L7016		Minor
C	R438 East		Major
D	L3010 to Site		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.00			90.0	✓	1.00
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90
D	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	626	-	-	-	-	-	-	0.243	0.347	0.243	-	-	-
1	B-A	552	0.101	0.254	0.254	-	-	-	0.160	0.363	-	0.254	0.254	0.127
1	B-C	681	0.104	0.264	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	552	0.101	0.254	0.254	-	-	-	0.160	0.363	0.160	-	-	-
1	B-D, offside lane	552	0.101	0.254	0.254	-	-	-	0.160	0.363	0.160	-	-	-
1	C-B	626	0.243	0.243	0.347	-	-	-	-	-	-	-	-	-
1	D-A	681	-	-	-	-	-	-	0.264	-	0.104	-	-	-
1	D-B, nearside lane	552	0.160	0.160	0.363	-	-	-	0.254	0.254	0.101	-	-	-
1	D-B, offside lane	552	0.160	0.160	0.363	-	-	-	0.254	0.254	0.101	-	-	-
1	D-C	552	-	0.160	0.363	0.127	0.254	0.254	0.254	0.254	0.101	-	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2036	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	99	100.000
B		✓	27	100.000
C		✓	88	100.000
D		✓	19	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	10	80	9
	B	13	0	8	6
	C	69	10	0	9
	D	6	9	4	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-ACD	0.05	7.36	0.1	A
A-BCD	0.02	6.37	0.0	A
A-B				
A-C				
D-ABC	0.04	7.17	0.0	A
C-ABD	0.02	6.41	0.0	A
C-D				
C-A				

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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	20	556	0.037	20	0.0	7.048	A
A-BCD	7	610	0.011	7	0.0	6.264	A
A-B	8			8			
A-C	60			60			
D-ABC	14	560	0.026	14	0.0	6.917	A
C-ABD	8	608	0.012	7	0.0	6.292	A
C-D	7			7			
C-A	52			52			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	24	551	0.044	24	0.0	7.179	A
A-BCD	8	607	0.013	8	0.0	6.308	A
A-B	9			9			
A-C	72			72			
D-ABC	17	555	0.031	17	0.0	7.023	A
C-ABD	9	605	0.015	9	0.0	6.342	A
C-D	8			8			
C-A	62			62			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	30	543	0.055	30	0.1	7.363	A
A-BCD	10	603	0.016	10	0.0	6.368	A
A-B	11			11			
A-C	88			88			
D-ABC	21	548	0.038	21	0.0	7.170	A
C-ABD	11	601	0.018	11	0.0	6.411	A
C-D	10			10			
C-A	76			76			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	30	543	0.055	30	0.1	7.364	A
A-BCD	10	603	0.016	10	0.0	6.368	A
A-B	11			11			
A-C	88			88			
D-ABC	21	548	0.038	21	0.0	7.170	A
C-ABD	11	600	0.018	11	0.0	6.411	A
C-D	10			10			
C-A	76			76			

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08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	24	551	0.044	24	0.0	7.183	A
A-BCD	8	607	0.013	8	0.0	6.308	A
A-B	9			9			
A-C	72			72			
D-ABC	17	555	0.031	17	0.0	7.026	A
C-ABD	9	605	0.015	9	0.0	6.345	A
C-D	8			8			
C-A	62			62			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	20	556	0.037	20	0.0	7.053	A
A-BCD	7	610	0.011	7	0.0	6.264	A
A-B	8			8			
A-C	60			60			
D-ABC	14	560	0.026	14	0.0	6.923	A
C-ABD	8	608	0.012	8	0.0	6.292	A
C-D	7			7			
C-A	52			52			

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2036, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Boherdurrow Crossroads	Crossroads	Two-way	2.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2036	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	129	100.000
B		✓	12	100.000
C		✓	99	100.000
D		✓	76	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	18	101	10
	B	7	0	0	5
	C	84	9	0	6
	D	8	60	8	0

Vehicle Mix

HV %s

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

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-ACD	0.03	7.96	0.0	A
A-BCD	0.02	6.40	0.0	A
A-B				
A-C				
D-ABC	0.16	8.80	0.2	A
C-ABD	0.02	6.49	0.0	A
C-D				
C-A				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	9	509	0.018	9	0.0	7.565	A
A-BCD	8	609	0.012	7	0.0	6.287	A
A-B	14			14			
A-C	76			76			
D-ABC	57	529	0.108	57	0.1	7.992	A
C-ABD	7	603	0.011	7	0.0	6.342	A
C-D	5			5			
C-A	63			63			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	11	500	0.022	11	0.0	7.726	A
A-BCD	9	606	0.015	9	0.0	6.335	A
A-B	16			16			
A-C	91			91			
D-ABC	68	523	0.131	68	0.2	8.318	A
C-ABD	8	598	0.014	8	0.0	6.403	A
C-D	5			5			
C-A	75			75			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	13	488	0.027	13	0.0	7.957	A
A-BCD	11	602	0.018	11	0.0	6.401	A
A-B	20			20			
A-C	111			111			
D-ABC	84	513	0.163	83	0.2	8.790	A
C-ABD	10	592	0.017	10	0.0	6.488	A
C-D	7			7			
C-A	92			92			

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17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	13	488	0.027	13	0.0	7.958	A
A-BCD	11	602	0.018	11	0.0	6.401	A
A-B	20			20			
A-C	111			111			
D-ABC	84	513	0.163	84	0.2	8.797	A
C-ABD	10	592	0.017	10	0.0	6.488	A
C-D	7			7			
C-A	92			92			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	11	500	0.022	11	0.0	7.728	A
A-BCD	9	606	0.015	9	0.0	6.338	A
A-B	16			16			
A-C	91			91			
D-ABC	68	523	0.131	68	0.2	8.328	A
C-ABD	8	598	0.014	8	0.0	6.406	A
C-D	5			5			
C-A	75			75			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-ACD	9	508	0.018	9	0.0	7.568	A
A-BCD	8	609	0.012	8	0.0	6.290	A
A-B	14			14			
A-C	76			76			
D-ABC	57	529	0.108	57	0.1	8.012	A
C-ABD	7	603	0.011	7	0.0	6.343	A
C-D	5			5			
C-A	63			63			

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