Technical note 03

ATKINS

Project:	Transport Evidence Base - Base Year Data Collection	**To:**	Department for Infrastructure
Subject:	TN03: Final Outputs	**From:**	Department for Economy
Date:	9 Jun 2017	**cc:**	
Version:	v1.0	**Reviewed:**	

1.   Introduction

The Department for Infrastructure (NI) (DFI) has commissioned Atkins Ltd to provide professional services in relation to the project "Transport Evidence Base". This project has been commissioned under Lot 3: Transport Policy and Strategy Formulation of the DFI Transport Planning & Modelling Managed Services Framework.

The Department for the Economy are undertaking a wider review of cross border economic activity. Traffic and travel across the border regions is one indicator that the Department are keen to better understand. The focus of this study is to identify and extract data relating to cross-border movements from the recently constructed Northern Ireland Strategic Model (NISM) and the Belfast model. Atkins was initially commissioned to interrogate the traffic models to identify if they contain sufficient relevant data to merit further secondary analysis. A review of the model trip matrices and the supporting count data revealed that there was sufficient information to warrant further analysis. This note presents a summary of the information drawn from these models.

1.1.   Purpose of this Note

This note briefly sets out a summary of the following information:

- Modelled Weekday 12 hour trips as extracted from the trip matrix using a compressed sector system;
- Selected Heat Map Examples;
- High level Estimation of Total Person Movements; and
- Border Traffic Count Summary.

The analysis in this note is based on the methodology outlined in TN02 and discussions with Department for Economy on 31st May 2017.

2.   Modelled Weekday 12 Hour trips

The 12 hour flows between sectors have been rounded to the nearest 10 trips and four matrices have been produced which summarise:

- Trips from RoI sectors to NI Sectors – User Class 1-3;
- Trips from RoI sectors to NI Sectors – User Class 4;
- Trips from NI sectors to RoI Sectors – User Class 1-3;
- Trips from NI sectors to RoI Sectors – User Class 4.

These matrices can be found in Appendix A and should be read in conjunction with the Model Sector System as provided at Appendix A.1 in TN02.

Please note that the matrices did not contain any ROI to ROI movements and therefore other sources of information need to be sought to understand these movements – for example the A5 study undertaken by Mouchel.

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3.   Selected Heat Map Examples

3.1. High Level

The level of traffic generated between selected origins and destinations is presented visually in the form of 'heat maps'. Each figure includes a legend to identify the relative volumes of trip movement. To show the general trend of travel from NI to RoI and vice versa, the NI sectors were aggregated into a single high level sector. Likewise, to show the general trend of travel from RoI to NI, the RoI sectors were aggregated to provide a single high level sector.

Table 3.1 presents a summary of the heat map examples which are provided at Appendix B:

Table 3.1 – High Level Heat Map Examples

Figure No.	Description	User Class	Initial Comments
B1	Between All NI to 30 RoI Sectors	UC1-3 (Car/LGV)	High level of trips to North Donegal
B.2	Between All NI to 30 RoI Sectors	UC4 (HGV)	Highest level of trips to sectors containing ports – Dublin and Rosslare
B.3	Between All RoI to 26 NI Sectors	UC1-3 (Car/LGV)	High levels of trips to Border Sectors and Belfast
B.4	Between All RoI to 26 NI Sectors	UC4 (HGV)	High levels of trips to Border Sectors and Belfast

Note: Figure B.1 suggests that the volumes of trips in and out of sector 9617 (Carndonagh)are relatively significant. This level of activity is not intuitive and we would recommend that this figure should not be distributed further without verification using an independent dataset. This issue is also apparent in Appendix D.

3.2. Sector Level Examples

Table 3.1 presents a summary of the heat map examples focused on trips to and from 2 sectors in NI and 2 sectors in RoI. These are provided at Appendix C

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Table 2.1 – Heat Map Examples

Figure No.	Origin	Destination	User Class
C.1	Sector 9522 (Newry)	All RoI	UC1-3 (Car/LGV)
C.2	All RoI	Sector 9522 (Newry)	UC1-3 (Car/LGV)
C.3	Sector 9522 (Newry)	All RoI	UC4 (HGV)
C.4	All RoI	Sector 9522 (Newry)	UC4 (HGV)
C.5	Sector 9507 (Belfast)	All RoI	UC1-3 (Car/LGV)
C.6	All RoI	Sector 9507 (Belfast)	UC1-3 (Car/LGV)
C.7	Sector 9507 (Belfast)	All RoI	UC4 (HGV)
C.8	All RoI	Sector 9507 (Belfast)	UC4 (HGV)
C.9	Sector 1022 (Buncrana)	All N.I.	UC1-3 (Car/LGV)
C.10	All N.I.	Sector 1022 (Buncrana)	UC1-3 (Car/LGV)
C.11	Sector 1022 (Buncrana)	All N.I.	UC4 (HGV)
C.12	All N.I.	Sector 1022 (Buncrana)	UC4 (HGV)
C.13	Sector 1026 (Dublin)	All N.I.	UC1-3 (Car/LGV)
C.14	All N.I.	Sector 1026 (Dublin)	UC1-3 (Car/LGV)
C.15	Sector 1026 (Dublin)	All N.I.	UC4 (HGV)
C.16	All N.I.	Sector 1026 (Dublin)	UC4 (HGV)

Note the above issue regarding sector 9617 (Carndonagh) is also apparent on these figures.

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4. Cross Border Person Trips

The traffic movements have been subject to further secondary analysis to help estimate the number of person trips that may be generated. To provide this high-level indication of the number of cross border person trips the following national data sources have been used:

- National Travel Survey: England 2015 Table NTS0401
- National Travel Survey: GB 2015 Table NTS0906

Table 5-1 provides an estimate of car occupancy by trip purpose set out in Table NTS0906.

Table 5.1 – Car Occupancy by Trip Purpose

Trip Purpose	Occupancy NTS0906
Commuting	1.2
Business	1.2
Education	2.0
Shopping	1.7
Personal Business	1.4
Leisure	1.7
Holiday/Day Trip	2.0
Other	2.0

The following occupancy levels derrived for each user class is shown in Table 5.2.

Table 5.2 – Car Occupancy by User Class

User Class	Trip Purpose	Occupancy
UC1	Business	1.2
UC2	Weighted average of Commuting, Education, Shopping, Personal Business and Leisure	1.6*
UC3	Business	1.2
UC4	Business	1.2

*A weighted average of the occupancy has been taken using the percentage trip purpose set out in table NTS0401.

A summary of the total person trips is provided in tables 5.3 and 5.4.

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Table 5.3 – Total Person Trips from NI to RoI

User Class	Occupancy
UC1	3173
UC2	81598
UC3	1647
UC4	15007

Table 5.4 – Total Person Trips from RoI to NI

User Class	Occupancy
UC1	9109
UC2	119338
UC3	4805
UC4	8539

This equates to a total of **243,216** two-way cross border person trips over a 12hr period.

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5. Border Traffic Count Summary

5.1. Data Sources

Various sources of data have been collated to gain an understanding of the volume of traffic crossing the border at various locations on a typical weekday. In total, data from 42 different Automatic Traffic Count (ATC) locations has been sourced from:

- ATC from the A5 Study;
- Permanent ATCs from Transport for Infrastructure Ireland[1];
- New data collected to inform the Lead Modelling Specialist;
- Permanent ATCs from TNI.

(1) https://www.nratrafficdata.ie/c2/gmapbasic.asp?sgid=ZvyVmXU8jBt9PJE$c7UXt6

5.2. Cross Border Trips

The ATC's were reviewed to summarise the total vehicle trips travelling in each direction across the border along with the respective Heavy Goods vehicle (HGV) percentage for each of the following time periods:

- Weekday AM peak hour;
- Weekday Interpeak hour;
- Weekday PM peak hour;
- Weekday 12hr average;
- Weekday 24hr average.

5.3. Traffic Count Outputs

The following traffic count outputs are provided at Appendix D:

Figures

- D.1. – 2 Way Flow – AM, IP & PM
- D.2. – 2 Way Flow – 12hr & 24hr Average Day

Summary Tables

- D.3. – 2 Way Flow Matrix
- D.4. – 1 Way Flow Matrix (from NI)
- D.5. – 1 Way Flow Matrix (from RoI)

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Appendix A –Sector Matrices

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Figure A.1 – Trips from RoI to NI UC1-3

Modelled Weekday 12hr Car/LGV Trips (UC1-3)

Origin: RoI   Destination:NI

RoI Sector	Sector Description	9501	9502	9503	9504	9505	9506	9507	9508	9509	9510	9511	9512	9513	9514	9515	9516	9517	9518	9519	9520	9521	9522	9523	9524	9525	9526
NI Sector		95AA	95BB	95CC	95DD	95EE	95FF	95GG	95HH	95II	95JJ	95KK	95LL	95MM	95NN	95OO	95PP	95QQ	95RR	95SS	95TT	95UU	95VV	95WW	95XX	95YY	95ZZ
LGD Reference		Antrim	Newtownards	Armagh	Ballymena	Ballymoney	Banbridge	Belfast	Carrickfergus	Castlereagh	Coleraine	Cookstown	Craigavon	Derry	Downpatrick	Dungannon	Enniskillen	Larne	Limavady	Lisburn	Magherafelt	Ballycastle	Newry	Glengormley	Bangor	Omagh	Strabane
9601	Sligo	20	0	20	0	0	0	40	0	0	10	20	10	40	0	20	190	0	0	20	0	0	0	0	0	40	10
9602	Manorhamilton	10	0	0	0	0	10	60	0	0	0	0	0	0	0	0	610	0	0	0	0	0	0	0	0	40	0
9603	Mohill	0	0	0	0	0	30	20	0	0	0	10	0	0	0	0	660	0	0	0	0	0	0	0	0	20	20
9604	Ballyconnell	20	0	20	0	0	0	20	0	0	0	0	0	0	0	0	2290	0	0	10	0	0	10	10	0	40	0
9605	Derrygara	0	0	110	0	0	0	40	0	10	0	0	0	10	0	20	1330	0	0	10	0	0	20	20	0	20	0
9606	Cootehill	20	0	110	0	0	50	20	0	0	10	0	0	0	0	0	320	0	0	10	0	0	50	10	0	20	0
9607	Ballinagh	0	0	40	0	0	0	0	0	0	0	0	0	0	0	10	170	0	0	0	0	0	0	0	10	0	0
9608	Emyvale	50	0	390	0	0	20	130	0	0	20	40	120	20	0	810	530	10	0	0	0	0	50	30	0	110	10
9609	Monaghan	30	0	1210	0	0	0	170	0	0	20	30	310	20	0	470	270	0	0	40	0	0	230	70	0	110	0
9610	Clones	10	10	150	0	0	0	70	0	0	20	10	50	20	0	80	940	0	0	0	0	0	40	30	10	70	0
9611	Castleblayney	0	10	910	0	0	80	80	0	0	0	10	190	0	0	80	110	0	0	10	0	0	840	40	10	40	0
9612	Carrickmacross	10	0	170	0	0	30	150	0	0	10	0	40	0	0	60	50	0	10	10	0	0	590	0	0	10	0
9613	Castlebellingham	40	0	60	10	0	60	230	0	20	20	0	90	10	0	20	10	0	0	20	0	0	570	20	10	20	0
9614	Carlingford	10	0	110	0	0	200	280	0	0	20	20	130	0	20	30	0	0	0	50	0	0	2980	100	10	0	10
9615	Bundoran	10	0	0	0	0	0	40	0	0	10	0	10	60	0	0	1030	0	10	0	0	0	0	0	0	130	20
9616	Glangevlin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400	0	0	0	0	0	0	0	0	10	10
9617	Carndonagh	60	10	30	40	40	0	710	10	20	780	30	50	20870	10	30	30	0	720	30	100	0	10	180	30	260	540
9618	Raphoe	0	0	10	0	0	0	60	0	0	140	20	0	2790	0	20	30	0	130	10	10	0	0	20	0	260	1930
9619	Ballybofey	20	0	10	0	0	0	170	0	10	110	20	10	1860	0	10	100	10	20	10	40	0	0	90	0	560	2970
9620	Donegal	10	0	0	0	0	0	80	0	0	60	0	0	440	0	0	170	0	10	0	10	0	0	60	0	100	180
9621	Letterkenny	10	10	0	10	0	0	300	0	0	350	30	10	3780	0	40	30	10	220	40	10	0	10	70	0	120	720
9622	Buncrana	10	0	0	0	0	0	190	0	0	220	30	50	9180	0	0	30	0	120	0	80	0	10	20	10	190	340
9623	Dundalk	0	10	140	10	0	280	280	0	0	0	10	130	10	30	60	20	0	0	100	0	0	2450	30	40	20	0
9624	Longford	40	0	30	0	0	0	130	10	0	0	0	20	20	0	10	260	0	10	0	10	0	50	20	0	20	0
9625	Galway	0	10	10	0	10	10	140	0	10	20	0	20	20	10	20	200	10	0	90	0	0	20	50	20	20	10
9626	Dublin	80	30	100	20	10	50	570	20	10	80	10	80	50	40	10	120	10	0	120	20	0	720	90	60	30	10
9627	Kildare	60	10	40	10	0	20	350	0	20	60	10	70	50	0	30	190	0	10	70	30	0	300	60	20	10	10
9628	Limerick	0	10	0	20	0	0	60	0	0	0	0	0	10	10	0	30	0	0	10	10	0	20	10	0	0	0
9629	Kilkenny	30	0	0	0	10	0	80	10	10	10	0	0	10	30	10	60	10	0	30	0	0	70	10	10	20	10
9630	Cork	10	0	10	0	10	10	80	20	0	0	10	10	10	10	0	10	0	0	20	10	0	60	0	10	0	0

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Figure A.2 – Trips from RoI to NI UC4

		Belfast and Northern Ireland Models: Cross Border Movements																									
		Modelled Weekday 12hr HV Trips (UC4)																									
		Origin: RoI Destination:NI																									
	NI Sector	9501	9502	9503	9504	9505	9506	9507	9508	9509	9510	9511	9512	9513	9514	9515	9516	9517	9518	9519	9520	9521	9522	9523	9524	9525	9526
	LGD Reference	95AA	95BB	95CC	95DD	95EE	95FF	95GG	95HH	95II	95JJ	95KK	95LL	95MM	95NN	95OO	95PP	95QQ	95RR	95SS	95TT	95UU	95VV	95WW	95XX	95YY	95ZZ
RoI Sector	Sector Description	Antrim	Newtownards	Armagh	Ballymena	Ballymoney	Banbridge	Belfast	Carrickfergus	Castlereagh	Coleraine	Cookstown	Craigavon	Derry	Downpatrick	Dungannon	Enniskillen	Larne	Limavady	Lisburn	Magherafelt	Ballycastle	Newry	Glengormley	Bangor	Omagh	Strabane
9601	Sligo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	10	0
9602	Manorhamilton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
9603	Mohill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9604	Ballyconnell	0	0	0	0	0	0	10	0	0	0	0	0	0	0	10	20	0	0	10	0	0	10	0	0	10	0
9605	Derrygara	0	0	10	0	0	0	20	0	0	10	10	0	0	0	10	20	0	0	10	0	0	10	0	0	10	0
9606	Cootehill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9607	Ballinagh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9608	Emyvale	0	0	0	0	0	0	10	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0
9609	Monaghan	10	0	20	10	0	10	50	0	0	10	20	0	0	0	30	10	0	0	20	0	0	20	10	0	10	0
9610	Clones	0	0	0	0	0	0	10	0	0	0	0	0	0	0	10	10	0	0	10	0	0	10	0	0	10	0
9611	Castleblayney	0	0	10	0	0	0	30	0	0	0	10	0	0	0	10	0	0	0	10	0	0	10	0	0	0	0
9612	Carrickmacross	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
9613	Castlebellingham	0	0	10	0	0	10	30	0	0	0	10	0	0	0	10	0	0	0	10	0	0	20	0	0	0	0
9614	Carlingford	0	0	10	0	0	10	30	0	0	0	10	0	0	0	10	0	0	0	10	0	0	20	10	0	0	0
9615	Bundoran	0	0	0	0	0	0	10	0	0	10	0	0	0	0	10	10	0	0	0	0	0	0	0	0	10	0
9616	Glangevlin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9617	Carndonagh	10	0	0	20	0	0	50	0	0	10	10	10	20	0	20	10	0	10	10	10	0	10	10	0	20	10
9618	Raphoe	0	0	0	0	0	0	10	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	10	0
9619	Ballybofey	0	0	0	10	0	0	20	0	0	0	10	0	0	0	10	10	0	0	10	0	0	0	0	0	20	10
9620	Donegal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
9621	Letterkenny	10	0	10	10	0	0	40	0	0	10	20	10	10	0	20	10	0	0	10	10	0	10	10	0	30	10
9622	Buncrana	0	0	10	0	0	0	20	0	0	10	0	0	10	0	10	10	0	0	0	0	0	0	0	0	0	0
9623	Dundalk	10	10	20	10	0	20	150	0	10	0	10	30	0	10	30	10	10	0	60	0	0	90	20	10	10	0
9624	Longford	10	10	20	10	0	20	110	0	0	10	20	30	10	10	50	50	0	0	50	10	0	50	20	0	30	10
9625	Galway	10	0	10	0	0	0	40	0	0	10	10	0	0	0	10	30	0	0	20	0	0	0	10	0	20	0
9626	Dublin	50	30	110	40	20	90	470	10	20	50	70	110	30	50	170	80	20	20	190	20	10	410	70	20	60	30
9627	Kildare	20	10	30	10	10	30	140	0	10	20	20	30	10	10	50	30	10	0	60	10	0	120	20	0	20	10
9628	Limerick	0	0	0	0	0	0	20	0	0	0	10	0	0	0	10	10	0	0	10	0	0	10	0	0	10	0
9629	Kilkenny	20	10	30	10	10	30	140	0	10	20	20	30	10	10	50	30	10	0	60	10	0	120	20	0	20	10
9630	Cork	0	0	10	0	0	10	30	0	0	0	10	0	0	0	10	10	0	0	10	0	0	20	0	0	10	0

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Figure A.3 – Trips from NI to RoI UC1-3

Belfast and Northern Ireland Models: Cross Border Movements

Modelled Weekday 12hr Car/LGV Trips (UC1-3)

Origin: NI   Destination:RoI

NI Sector	LGD Reference	RoI Sector / Sector Description	9601 Sligo	9602 Manorhamilton	9603 Mohill	9604 Ballyconnell	9605 Derrygara	9606 Cootehill	9607 Ballinagh	9608 Emyvale	9609 Monaghan	9610 Clones	9611 Castleblayney	9612 Carrickmacross	9613 Castlebellingham	9614 Carlingford	9615 Bundoran	9616 Glangevlin	9617 Carndonagh	9618 Raphoe	9619 Ballybofey	9620 Donegal	9621 Letterkenny	9622 Bunrana	9623 Dundalk	9624 Longford	9625 Galway	9626 Dublin	9627 Kildare	9628 Limerick	9629 Kilkenny	9630 Cork
9501	95AA	Antrim	10	0	0	10	0	10	0	30	30	0	0	10	20	10	10	0	40	0	10	10	10	10	0	30	0	50	40	0	20	10
9502	95BB	Newtownards	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	10	0	0	0	10	0	10	0	10	30	10	0	0	0
9503	95CC	Armagh	10	0	0	10	70	70	30	250	790	90	580	100	40	70	0	0	30	10	10	0	0	0	80	20	10	60	30	0	10	10
9504	95DD	Ballymena	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	30	10	0	0	10	0	10	0	10	10	10	10	10	10
9505	95EE	Ballymoney	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	10	10	0	0	10	10
9506	95FF	Banbridge	0	0	10	0	0	30	0	10	0	0	50	10	30	120	0	0	0	0	0	0	0	0	160	0	10	30	20	0	0	10
9507	95GG	Belfast	30	30	20	10	30	10	0	80	110	40	50	100	140	180	20	0	430	40	110	60	190	120	170	80	90	400	240	40	50	60
9508	95HH	Carrickfergus	0	0	10	0	0	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	0	10	0	10	10	0	10	10
9509	95II	Castlereagh	0	0	0	0	10	0	0	0	0	0	0	10	0	0	0	0	10	0	10	0	0	0	0	0	10	10	10	10	10	0
9510	95JJ	Coleraine	10	0	0	0	0	10	0	10	10	20	10	10	10	10	10	0	490	80	70	40	230	140	10	0	20	60	40	0	10	0
9511	95KK	Cookstown	10	0	0	0	0	0	0	30	20	10	10	0	10	0	10	0	20	10	10	0	20	20	10	0	10	10	10	0	0	0
9512	95LL	Craigavon	10	0	10	0	0	0	0	80	200	30	120	30	50	80	10	0	30	0	10	0	10	30	70	10	10	60	50	10	0	10
9513	95MM	Derry	30	0	0	0	10	0	0	10	10	10	0	0	10	0	40	0	13380	1840	1200	270	2470	5910	10	20	20	40	30	10	10	10
9514	95NN	Downpatrick	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	10	0	0	0	20	0	0	30	0	10	0	10	20	10
9515	95OO	Dungannon	10	0	0	0	10	0	10	530	320	50	50	40	10	20	0	0	20	10	10	0	20	0	40	10	10	10	30	10	10	0
9516	95PP	Enniskillen	90	390	410	1490	830	180	110	350	220	710	70	40	10	0	680	260	20	20	60	110	10	20	10	150	120	100	120	20	40	10
9517	95QQ	Larne	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	10	0	10	0	0	0	10	10	10	0	10	0
9518	95RR	Limavady	0	0	0	0	10	0	0	10	0	0	10	0	0	0	10	0	470	80	10	10	160	90	0	10	0	0	0	0	0	0
9519	95SS	Lisburn	10	0	0	10	10	10	0	0	30	0	10	10	10	30	0	0	20	10	10	0	30	0	70	0	60	80	50	10	20	10
9520	95TT	Magherafelt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	10	30	10	10	50	0	10	0	20	30	10	0	10
9521	95UU	Ballycastle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
9522	95VV	Newry	0	0	0	10	10	30	0	30	150	30	530	380	330	1880	0	0	10	0	0	0	10	10	1730	30	20	220	120	10	30	30
9523	95WW	Glengormley	0	0	0	10	10	10	10	20	40	20	20	0	20	60	0	0	110	10	50	30	50	10	20	10	30	60	40	10	10	0
9524	95XX	Bangor	0	0	0	0	0	0	0	0	0	10	10	0	10	10	0	0	20	0	0	0	0	10	30	0	10	50	10	0	10	10
9525	95YY	Omagh	30	30	10	30	10	10	0	70	80	40	30	10	10	0	80	10	160	170	350	60	70	120	20	10	10	30	10	10	10	0
9526	95ZZ	Strabane	10	0	10	0	0	0	0	10	0	0	0	0	10	10	10	10	260	1210	1850	90	340	160	0	0	10	10	10	0	10	0

Technical note 03

Figure A.4 – Trips from NI to RoI UC4

Belfast and Northern Ireland Models: Cross Border Movements

Modelled Weekday 12hr HGV Trips (UC4)

Origin: NI   Destination:RoI

NI Sector	LGD Reference	RoI Sector / Sector Description	9601 Sligo	9602 Manorhamilton	9603 Mohill	9604 Ballyconnell	9605 Derrygara	9606 Cootehill	9607 Ballinagh	9608 Emyvale	9609 Monaghan	9610 Clones	9611 Castleblayney	9612 Carrickmacross	9613 Castlebellingham	9614 Carlingford	9615 Bundoran	9616 Glangevlin	9617 Carndonagh	9618 Raphoe	9619 Ballybofey	9620 Donegal	9621 Letterkenny	9622 Bunrana	9623 Dundalk	9624 Longford	9625 Galway	9626 Dublin	9627 Kildare	9628 Limerick	9629 Kilkenny	9630 Cork
9501	95AA	Antrim	0	0	0	0	0	0	0	0	20	0	10	0	10	10	0	0	20	0	10	0	10	10	40	20	50	60	10	0	40	10
9502	95BB	Newtownards	0	0	0	0	0	0	0	0	10	0	10	0	0	10	0	0	0	0	0	0	0	0	30	10	20	50	10	0	30	10
9503	95CC	Armagh	0	0	0	10	10	0	0	10	60	10	20	10	10	20	0	0	10	0	10	0	10	0	80	30	20	150	20	10	90	10
9504	95DD	Ballymena	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	20	0	10	0	10	10	20	10	40	30	0	0	20	0
9505	95EE	Ballymoney	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	0
9506	95FF	Banbridge	0	0	0	0	0	0	0	0	20	0	10	10	0	0	0	0	0	0	0	0	0	0	50	20	20	70	10	0	40	10
9507	95GG	Belfast	0	0	0	20	40	0	0	40	200	30	80	30	70	100	10	0	90	20	40	0	50	50	480	200	340	690	100	30	410	70
9508	95HH	Carrickfergus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9509	95II	Castlereagh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
9510	95JJ	Coleraine	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	40	10	10	0	20	20	10	20	30	100	10	0	60	10
9511	95KK	Cookstown	0	0	0	0	10	0	0	10	30	0	0	0	0	0	0	0	10	10	10	0	10	10	20	20	50	50	10	0	30	0
9512	95LL	Craigavon	0	0	0	0	10	0	0	10	50	10	20	10	10	20	0	0	10	0	10	0	10	10	80	40	60	130	20	10	80	10
9513	95MM	Derry	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	50	10	10	0	20	30	0	10	40	10	10	0	20	10
9514	95NN	Downpatrick	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	30	10	10	50	10	0	30	10
9515	95OO	Dungannon	0	0	0	10	20	0	0	20	80	10	20	10	10	10	10	0	20	10	10	0	20	10	70	40	50	140	20	10	80	10
9516	95PP	Enniskillen	10	10	10	50	60	10	0	20	80	30	20	10	10	10	40	10	20	20	30	0	30	20	50	140	320	200	30	30	130	40
9517	95QQ	Larne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	10	20	0	0	10	0
9518	95RR	Limavady	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	10	0	10	20	0	0	0	10	0
9519	95SS	Lisburn	0	0	0	0	0	0	0	0	20	0	10	0	10	10	0	0	10	0	0	0	0	0	60	20	40	80	10	0	50	10
9520	95TT	Magherafelt	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	20	10	10	0	10	10	20	10	20	30	0	0	20	0
9521	95UU	Ballycastle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9522	95VV	Newry	0	0	0	10	10	0	0	10	70	10	40	10	40	60	0	0	10	0	10	0	10	0	270	70	20	520	70	10	300	40
9523	95WW	Glengormley	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0	0	10	0	0	0	0	0	30	10	20	40	10	0	20	0
9524	95XX	Bangor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	10	10	0	10	0
9525	95YY	Omagh	0	0	0	20	20	0	0	20	60	20	20	0	10	10	20	0	30	20	40	10	40	20	40	50	140	100	10	10	60	20
9526	95ZZ	Strabane	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10	0	20	10	20	0	30	20	10	30	60	70	10	10	40	10