

Department of Health, Social Services and Public Safety

Project Support Analysis Branch

Average Travel Speeds in Northern Ireland

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Developing Better Services – Speed Assumptions in Accessibility model

As a result of a response to “Developing Better Services”, challenging the speed assumptions used by the Department of Health, Social Services and Public Safety to calculate access, the Department has sought further information on average road speeds within Local Government Districts (LGDs) in Northern Ireland.

SIMPLIFIED MODELLING OF SPATIAL SYSTEMS

The SMOSS (Simplified Modelling of Spatial Systems) model used for “Developing Better Services” used the table of speed assumptions given below in Table 1.

Table1: Road Speeds (mph) used in SMOSS modelling

Road Type	Daytime Off-Peak
Motorway	61.85
A-Road	32.70
Dual Carriageway	46.65
B-road	46.65
Minor Road	25.00
Connections	15.00

NORTHERN IRELAND STRATEGIC TRANSPORT MODEL

An analysis carried out using the Northern Ireland Strategic Transport Model (NISTRM) gave some alternative sets of travel speed assumptions. NISTRM was commissioned by the Department of Environment (Roads Service Transportation Unit) in 1997 and has been formulated for use in the development and appraisal of transportation strategies and of major transport schemes, in addition to assisting with the formation of regional land use scenarios. The NISTRM model classifies each link in Northern Ireland according to type of road (A-class etc, Rural/Urban). This classification enables a speed/traffic flow characteristic to be attached to each link. Traffic Count Surveys and Journey to Work survey information then enable the model to calculate travel flows on every link. These flows in conjunction with the speed/traffic flow characteristic of each link determine the time taken to travel each link.

The Roads Service Transportation Unit advised that in order to derive an average speed for a particular class of road from NISTRM, the most appropriate method was to take a weighted average for all roads of a given type using road length as the weighting factor. For example, suppose there were two sections of A-Road, a 20 mile section with a NISTRM speed of 40 mph and a 10 mile section with a NISTRM speed of 50 mph, the weighted speed would be 43.3 mph (i.e. $((40 \times 20) + (50 \times 10)) / 30$).

The average speeds derived from this model at Northern Ireland level are given in Table 2. The speeds for Local Government Districts are given in Appendix 1.

Table 2. NISTRM road speeds (mph)

Road type	Average travel speeds (mph)
Rural motorways & dual carriageways	58.1
Other motorways & dual carriageways	21.4
Single A-class	49.1
Single B-class	47.6
Single C-class	28.1
Speed restricted	17.5
X roads (connectors)	32
Grand total	39.5

Average road speeds (mph) by Local Government District from NISTRM

Northern
Ireland -

Roadtypes speeds

Roadtype	Length weighted average
Rural motorway & Dual carriageways	58.1
Other Motorways & Dual carriageways	21.4
Single A-class	49.1
Single B-class	47.6
Single C-class	28.1
Speed restricted roads	17.5
X roads (connectors)	32.0
<i>Grand Total</i>	39.5

Antrim - Roadtypes speeds

LGD	Roadtype	Length weighted average
Antrim	Rural motorway & Dual carriageways	60.5
Antrim	Other Motorways & Dual carriageways	N/A
Antrim	Single A-class	49.9
Antrim	Single B-class	52.8
Antrim	Single C-class	47.6
Antrim	Speed restricted roads	13.3
Antrim	X roads (connectors)	20.6
	<i>Grand Total</i>	30.4

Ards - Roadtypes speeds

LGD	Roadtype	Length weighted average
Ards	Rural motorway & Dual carriageways	57.0
Ards	Other Motorways & Dual carriageways	N/A
Ards	Single A-class	54.7
Ards	Single B-class	51.9
Ards	Single C-class	47.8
Ards	Speed restricted roads	18.6
Ards	X roads (connectors)	29.8
	<i>Grand Total</i>	37.8

Armagh - Roadtypes speeds

LGD	Roadtype	Length weighted average
Armagh	Rural motorway & Dual carriageways	N/A
Armagh	Other Motorways & Dual carriageways	N/A
Armagh	Single A-class	54.6
Armagh	Single B-class	53.3
Armagh	Single C-class	47.8
Armagh	Speed restricted roads	16.7
Armagh	X roads (connectors)	46.0
<i>Grand Total</i>		38.5

Ballymena - Roadtypes speeds

LGD	Roadtype	Length weighted average
Ballymena	Rural motorway & Dual carriageways	61.1
Ballymena	Other Motorways & Dual carriageways	N/A
Ballymena	Single A-class	53.0
Ballymena	Single B-class	53.1
Ballymena	Single C-class	43.0
Ballymena	Speed restricted roads	15.8
Ballymena	X roads (connectors)	33.4
<i>Grand Total</i>		37.3

Ballymoney - Roadtypes speeds

LGD	Roadtype	Length weighted average
Ballymoney	Rural motorway & Dual carriageways	N/A
Ballymoney	Other Motorways & Dual carriageways	N/A
Ballymoney	Single A-class	52.7
Ballymoney	Single B-class	54.3
Ballymoney	Single C-class	N/A
Ballymoney	Speed restricted roads	21.9
Ballymoney	X roads (connectors)	56.5
<i>Grand Total</i>		47.9

Banbridge - Roadtypes speeds

LGD	Roadtype	Length weighted average
Banbridge	Rural motorway & Dual carriageways	57.8
Banbridge	Other Motorways & Dual carriageways	N/A
Banbridge	Single A-class	54.9
Banbridge	Single B-class	53.9
Banbridge	Single C-class	N/A
Banbridge	Speed restricted roads	18.7
Banbridge	X roads (connectors)	29.8
<i>Grand Total</i>		42.7

Belfast - Roadtypes speeds

LGD	Roadtype	Length weighted average
Belfast	Rural motorway & Dual carriageways	44.3
Belfast	Other Motorways & Dual carriageways	17.8
Belfast	Single A-class	15.5
Belfast	Single B-class	10.9
Belfast	Single C-class	9.2
Belfast	Speed restricted roads	N/A
Belfast	X roads (connectors)	17.1
<i>Grand Total</i>		15.7

Carrickfergus - Roadtypes speeds

LGD	Roadtype	Length weighted average
Carrickfergus	Rural motorway & Dual carriageways	N/A
Carrickfergus	Other Motorways & Dual carriageways	N/A
Carrickfergus	Single A-class	32.5
Carrickfergus	Single B-class	46.8
Carrickfergus	Single C-class	34.8
Carrickfergus	Speed restricted roads	17.6
Carrickfergus	X roads (connectors)	38.7
<i>Grand Total</i>		34.1

Castelreagh - Roadtypes speeds

LGD	Roadtype	Length weighted average
Castelreagh	Rural motorway & Dual carriageways	55.4
Castelreagh	Other Motorways & Dual carriageways	27.6
Castelreagh	Single A-class	33.4
Castelreagh	Single B-class	28.7
Castelreagh	Single C-class	N/A
Castelreagh	Speed restricted roads	21.7
Castelreagh	X roads (connectors)	29.8
<i>Grand Total</i>		31.7

Coleraine - Roadtypes speeds

LGD	Roadtype	Length weighted average
Coleraine	Rural motorway & Dual carriageways	59.0
Coleraine	Other Motorways & Dual carriageways	33.5
Coleraine	Single A-class	52.6
Coleraine	Single B-class	54.4
Coleraine	Single C-class	46.8
Coleraine	Speed restricted roads	19.7
Coleraine	X roads (connectors)	44.9
<i>Grand Total</i>		43.5

Cookstown - Roadtypes speeds

LGD	Roadtype	Length weighted average
Cookstown	Rural motorway & Dual carriageways	N/A
Cookstown	Other Motorways & Dual carriageways	N/A
Cookstown	Single A-class	54.5
Cookstown	Single B-class	54.0
Cookstown	Single C-class	N/A
Cookstown	Speed restricted roads	16.7
Cookstown	X roads (connectors)	29.8
<i>Grand Total</i>		42.2

Craigavon - Roadtypes speeds

LGD	Roadtype	Length weighted average
Craigavon	Rural motorway & Dual carriageways	62.6
Craigavon	Other Motorways & Dual carriageways	N/A
Craigavon	Single A-class	49.4
Craigavon	Single B-class	52.2
Craigavon	Single C-class	N/A
Craigavon	Speed restricted roads	15.3
Craigavon	X roads (connectors)	35.9
<i>Grand Total</i>		37.2

Derry - Roadtypes speeds

LGD	Roadtype	Length weighted average
Derry	Rural motorway & Dual carriageways	N/A
Derry	Other Motorways & Dual carriageways	N/A
Derry	Single A-class	45.2
Derry	Single B-class	N/A
Derry	Single C-class	N/A
Derry	Speed restricted roads	13.6
Derry	X roads (connectors)	26.4
<i>Grand Total</i>		23.7

Down - Roadtypes speeds

LGD	Roadtype	Length weighted average
Down	Rural motorway & Dual carriageways	N/A
Down	Other Motorways & Dual carriageways	N/A
Down	Single A-class	54.9
Down	Single B-class	52.8
Down	Single C-class	47.9
Down	Speed restricted roads	19.0
Down	X roads (connectors)	29.8
<i>Grand Total</i>		42.5

Dungannon - Roadtypes speeds

LGD	Roadtype	Length weighted average
Dungannon	Rural motorway & Dual carriageways	63.4
Dungannon	Other Motorways & Dual carriageways	N/A
Dungannon	Single A-class	54.1
Dungannon	Single B-class	54.3
Dungannon	Single C-class	N/A
Dungannon	Speed restricted roads	19.5
Dungannon	X roads (connectors)	29.8
<i>Grand Total</i>		48.8

Fermanagh - Roadtypes speeds

LGD	Roadtype	Length weighted average
Fermanagh	Rural motorway & Dual carriageways	N/A
Fermanagh	Other Motorways & Dual carriageways	N/A
Fermanagh	Single A-class	55.2
Fermanagh	Single B-class	54.4
Fermanagh	Single C-class	47.8
Fermanagh	Speed restricted roads	16.2
Fermanagh	X roads (connectors)	29.8
<i>Grand Total</i>		51.4

Larne - Roadtypes speeds

LGD	Roadtype	Length weighted average
Larne	Rural motorway & Dual carriageways	62.1
Larne	Other Motorways & Dual carriageways	30.5
Larne	Single A-class	52.7
Larne	Single B-class	54.0
Larne	Single C-class	45.7
Larne	Speed restricted roads	21.1
Larne	X roads (connectors)	34.4
<i>Grand Total</i>		44.1

Limavady - Roadtypes speeds

LGD	Roadtype	Length weighted average
Limavady	Rural motorway & Dual carriageways	N/A
Limavady	Other Motorways & Dual carriageways	N/A
Limavady	Single A-class	52.4
Limavady	Single B-class	53.4
Limavady	Single C-class	N/A
Limavady	Speed restricted roads	14.7
Limavady	X roads (connectors)	58.3
<i>Grand Total</i>		50.7

Lisburn - Roadtypes speeds

LGD	Roadtype	Length weighted average
Lisburn	Rural motorway & Dual carriageways	60.2
Lisburn	Other Motorways & Dual carriageways	N/A
Lisburn	Single A-class	44.1
Lisburn	Single B-class	48.1
Lisburn	Single C-class	41.1
Lisburn	Speed restricted roads	22.0
Lisburn	X roads (connectors)	32.2
<i>Grand Total</i>		41.5

Magherafelt - Roadtypes speeds

LGD	Roadtype	Length weighted average
Magherafelt	Rural motorway & Dual carriageways	N/A
Magherafelt	Other Motorways & Dual carriageways	N/A
Magherafelt	Single A-class	54.2
Magherafelt	Single B-class	53.2
Magherafelt	Single C-class	N/A
Magherafelt	Speed restricted roads	18.7
Magherafelt	X roads (connectors)	29.8
<i>Grand Total</i>		42.3

Moyle - Roadtypes speeds

LGD	Roadtype	Length weighted average
Moyle	Rural motorway & Dual carriageways	N/A
Moyle	Other Motorways & Dual carriageways	N/A
Moyle	Single A-class	56.6
Moyle	Single B-class	54.3
Moyle	Single C-class	N/A
Moyle	Speed restricted roads	22.0
Moyle	X roads (connectors)	29.8
<i>Grand Total</i>		46.9

Newry - Roadtypes speeds

LGD	Roadtype	Length weighted average
Newry	Rural motorway & Dual carriageways	59.3
Newry	Other Motorways & Dual carriageways	N/A
Newry	Single A-class	54.1
Newry	Single B-class	54.1
Newry	Single C-class	48.1
Newry	Speed restricted roads	19.7
Newry	X roads (connectors)	40.6
<i>Grand Total</i>		44.6

Newtownabbey - Roadtypes speeds

LGD	Roadtype	Length weighted average
Newtownabbey	Rural motorway & Dual carriageways	61.4
Newtownabbey	Other Motorways & Dual carriageways	28.5
Newtownabbey	Single A-class	41.9
Newtownabbey	Single B-class	41.3
Newtownabbey	Single C-class	28.6
Newtownabbey	Speed restricted roads	15.8
Newtownabbey	X roads (connectors)	46.9
<i>Grand Total</i>		39.1

North down - Roadtypes speeds

LGD	Roadtype	Length weighted average
North down	Rural motorway & Dual carriageways	55.1
North down	Other Motorways & Dual carriageways	25.2
North down	Single A-class	52.1
North down	Single B-class	49.7
North down	Single C-class	44.5
North down	Speed restricted roads	16.6
North down	X roads (connectors)	28.1
<i>Grand Total</i>		30.4

Omagh - Roadtypes speeds

LGD	Roadtype	Length weighted average
Omagh	Rural motorway & Dual carriageways	59.0
Omagh	Other Motorways & Dual carriageways	N/A
Omagh	Single A-class	53.9
Omagh	Single B-class	54.1
Omagh	Single C-class	N/A
Omagh	Speed restricted roads	18.6
Omagh	X roads (connectors)	29.8
<i>Grand Total</i>		47.4

Strabane - Roadtypes speeds

LGD	Roadtype	Length weighted average
Strabane	Rural motorway & Dual carriageways	N/A
Strabane	Other Motorways & Dual carriageways	N/A
Strabane	Single A-class	53.0
Strabane	Single B-class	54.0
Strabane	Single C-class	N/A
Strabane	Speed restricted roads	17.5
Strabane	X roads (connectors)	29.8
<i>Grand Total</i>		44.1