IS IT TOO WET TO COMMUTE BY BICYCLE IN BELFAST?

What are the most frequently mentioned reasons why people do not cycle? The most frequent is 'safety concerns' but high on the list is 'poor weather'. In 2014, the Department for Regional Development in Northern Ireland published a report which indicated that 19% of people gave 'bad weather' as a barrier that discouraged them from cycling short distances (less than three miles) [1] – the figure in 2011 was 24%. With Government efforts to increase the level of cycling – particularly as an everyday activity for shorter journeys – is this a feasible objective in terms of the weather?

Andrew Grieve, Head of the DRD Cycling Unit decided to find out. He regularly commutes the 2½ miles from his home in east Belfast to work in the city centre – a journey which takes, typically, 15 minutes in either direction. Each morning and late afternoon, over a period of one calendar year (2015), he kept a record of the 'rain' conditions throughout his commuting journeys. The results confirm one well known fact – Belfast is a damp city! However, they also revealed something quite surprising. Although ground conditions are often damp, only about one in six of all the journeys undertaken in the study were affected by rain – 85% of journeys were 'rain free'.

Andrew's morning commute was generally between 8.0 and 9.0 am. His evening commute was generally between 5.0 and 6.0 pm. Most of each journey was on the busy arterial route: Holywood Road – Albertbridge Road – East Bridge Street. The rain conditions were noted simply by observation throughout each journey and classified as one of the following:

Category	Sub-category	Description
Dry		No precipitation throughout the journey and the ground was dry
Damp	1	No precipitation throughout the journey but the ground was largely damp
	2	No precipitation throughout the journey but the ground was wet from earlier rain with puddles in various places
	3	Some intermittent spitting during part of the journey but insufficient to wet clothes
	4	Light or intermittent rain / spitting during the journey but insufficient to wet waterproofs
Rain		Rain throughout the journey
Table 1: Precipitation classifications		

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[1] https://www.drdni.gov.uk/sites/default/files/publications/drd/public-awareness-of-travelwise-ni-initiatives-may-2014.pdf, page 18.

During 2015 Andrew made his commuting journey into Belfast on 348 occasions in total. He made a further 29 comparable journeys (detours on his journey or a commute to or from an office other than his work location) in Belfast at the relevant commuting times. He was also able to collect observational data during a further 78 commuting times.

The following tables set out the results for each commuting journey – for both morning and evening journeys. Journeys categorised as 'Dry', 'Damp[1]' or 'Damp[2]' are grouped together as 'DRY' because during these journeys no rain fell. 'Damp[3]' is considered as 'BORDERLINE' as there was a little 'spitting' during the journey although not enough to wet clothes. 'Damp[4]' and 'Rain' are grouped together as 'WET' because rain fell throughout these journeys although of various intensities. The chart summarises this information on a monthly basis.

The results show that in Belfast, for journeys up to 2½ miles (4 km) in length, wet weather is not a serious problem – affecting only around 3 journeys in 20 (15%). It also reports that it is rare for rain to affect both commuting journeys in the one day.

	MORNING – ALL DATA						
	DRY			BORDERLINE	WET		
	Dry	Damp[1]	Damp[2]	Damp[3]	Damp[4]	Rain	TOTAL
January	2	7	8	5	0	0	22
February	2	10	5	2	1	0	20
March	6	6	4	2	0	4	22
April	15	3	0	0	0	1	19
May	13	4	1	0	0	1	19
June	16	1	1	0	0	2	20
July	6	1	0	1	0	0	8
August	12	2	2	1	2	1	20
September	15	4	0	1	0	1	21
October	12	1	2	2	1	0	18
November	4	7	8	0	1	1	21
December	1	7	11	1	0	2	22
2015	**104**	**53**	**42**	**15**	**5**	**13**	**232**
	44.8%	22.8%	18.1%	6.5%	2.2%	5.6%	
	85.8%			6.5%	7.8%		

	AFTERNOON – ALL DATA						
	DRY			BORDERLINE	WET		
	Dry	Damp[1]	Damp[2]	Damp[3]	Damp[4]	Rain	TOTAL
January	7	2	6	1	5	1	22
February	9	6	4	0	0	0	19
March	14	1	3	2	0	1	21

April	14	2	0	2	0	0	18
May	13	4	2	1	0	0	20
June	17	1	1	0	0	0	19
July	5	1	0	0	1	0	7
August	11	3	2	1	0	0	17
September	18	1	0	0	1	0	20
October	13	1	0	2	1	1	18
November	4	4	9	3	1	0	21
December	4	4	4	1	2	6	21
2015	**129**	**30**	**31**	**13**	**11**	**9**	**223**
	57.8%	13.5%	13.9%	5.8%	4.9%	4.0%	
	85.2%			5.8%		9.0%	
Table 2: Rain conditions by month for all commuting times where data was available							

|	Dry	Damp[1]	Damp[2]	Damp[3]	Damp[4]	Rain
Commutes	197	71	59	21	13	16
	52.3%	18.8%	15.6%	5.6%	3.4%	4.2%
Non commutes	36	12	14	7	3	6
	46.2%	15.4%	17.9%	10.0%	3.8%	7.7%
ALL	233	83	73	28	16	22
	51.2%	18.2%	16.0%	6.2%	3.5%	4.8%
SCALED UP	280	92	75	32	19	24
	53.6%	17.6%	14.4%	6.1%	3.6%	4.6%
	DRY			**BORDERLINE**	**WET**	
Commutes	327			21	29	
	86.7%			5.6%	7.7%	
Non commutes	62			7	9	
	79.5%			9.0%	11.5%	
ALL	389			28	38	
	85.5%			6.2%	8.4%	
SCALED UP	447			32	43	
	85.6%			6.1%	8.2%	
Table 3: Summary of rain conditions by categories scaled up to full year figures						
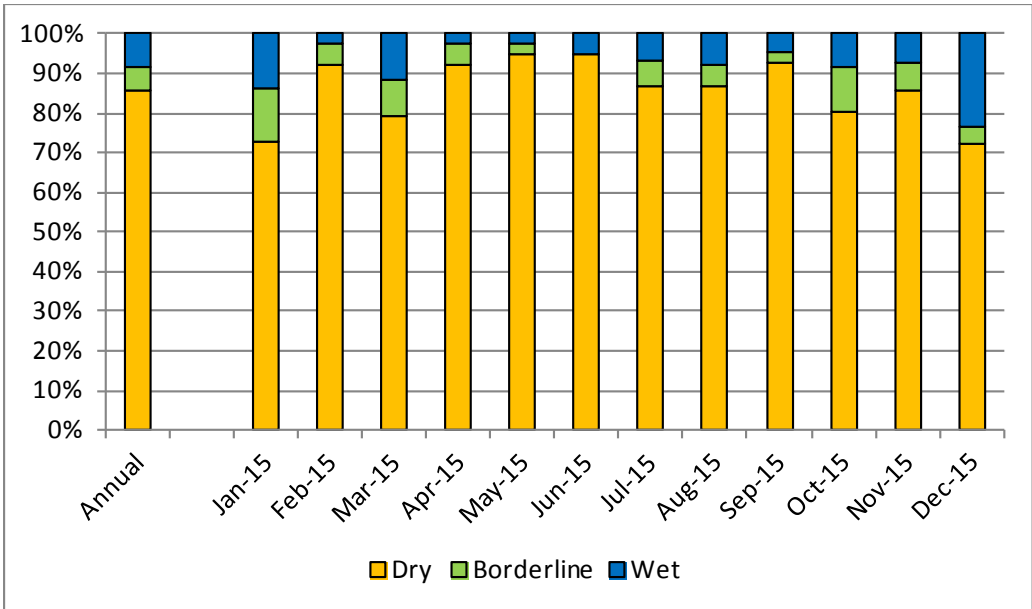
Figure 1: the proportion of journeys by rain conditions by month
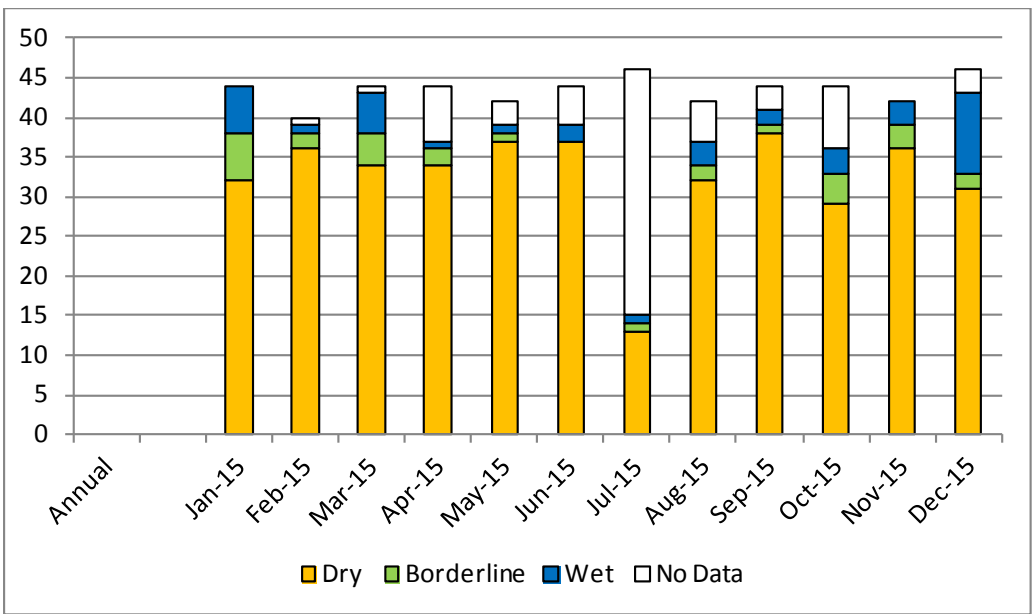
Figure 2: journeys by rain conditions by month