



**An Roinn Iompair
Turasóireachta agus Spóirt**

**Department of Transport,
Tourism and Sport**

**Investing In Our Transport Future: A Strategic Framework for Investment in
Land Transport**

Background Paper Seventeen

Regional Breakdown of Road Expenditure

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Research Note

Regional Breakdown of Road Expenditure

This research note serves as a regional analysis of expenditure on the Irish road system. It details spending per km and per capita for each county. It also introduces similar research carried out by Edgar Morgenroth at the ESRI. This analysis is provided in a series of figures below with all corresponding data listed in annex 2.

1. Work Done by EFEU

1.1 National Road Expenditure 2000-2014

The county breakdown of national road expenditure is detailed in figure 1. The analysis reveals that Dublin received the highest level of funding with Kildare in second place. The main drivers behind this trend were the higher cost of road projects in urban areas, the strategic nature of the road network in this area and the growing car demand that occurred in the Greater Dublin Area. For example, a number of major projects were completed in Dublin, Kildare, Kilkenny, Meath and Westmeath including the M50 motorway and upgrade, M1 and N7 road widening, the M4 bypass (PPP), the construction of the N6 between Kinnegad and Athlone and the N2 between Ashbourne and the M50.

Figure 2 reveals the county distribution of the 2014 allocation for national roads. Counties such as Galway, Mayo, Roscommon and Wexford feature highly with relatively large allocations for 2014 due to on-going projects. PPP payments for the N6 between Athlone and Ballinasloe and planning costs for a number of projects including the N6 Galway City Bypass, N18/N17 Gort to Tuam PPP scheme and the N59 Moycullen Bypass are all examples of major projects which have contributed to the higher expenditure level in Galway. Mayo, Roscommon and Wexford also had significant projects in 2014 which contributed to their increased levels of allocation.

Figure 1

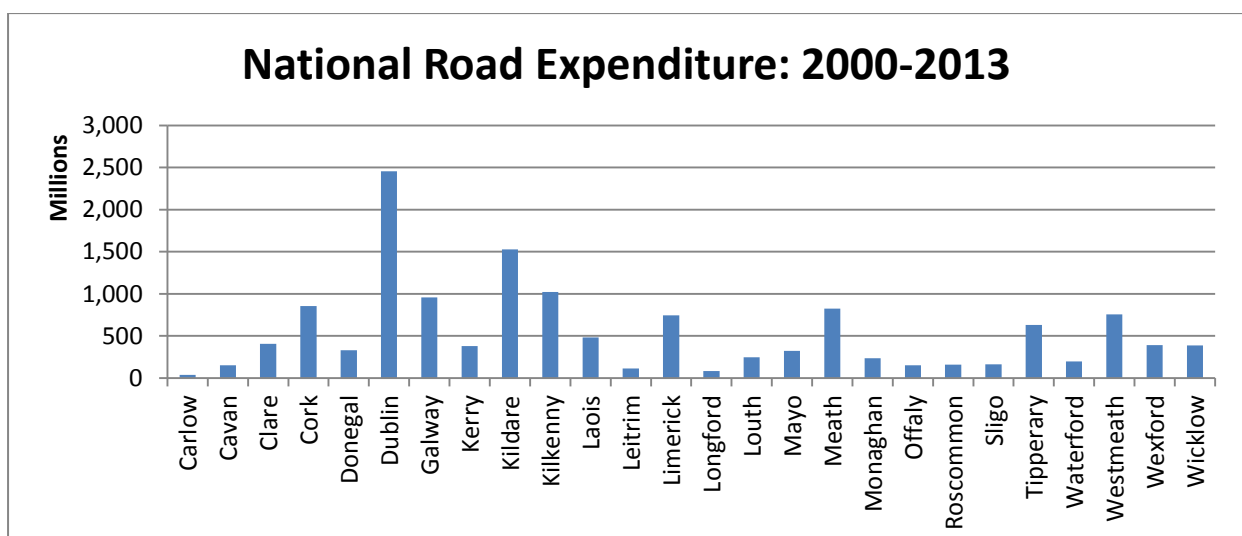
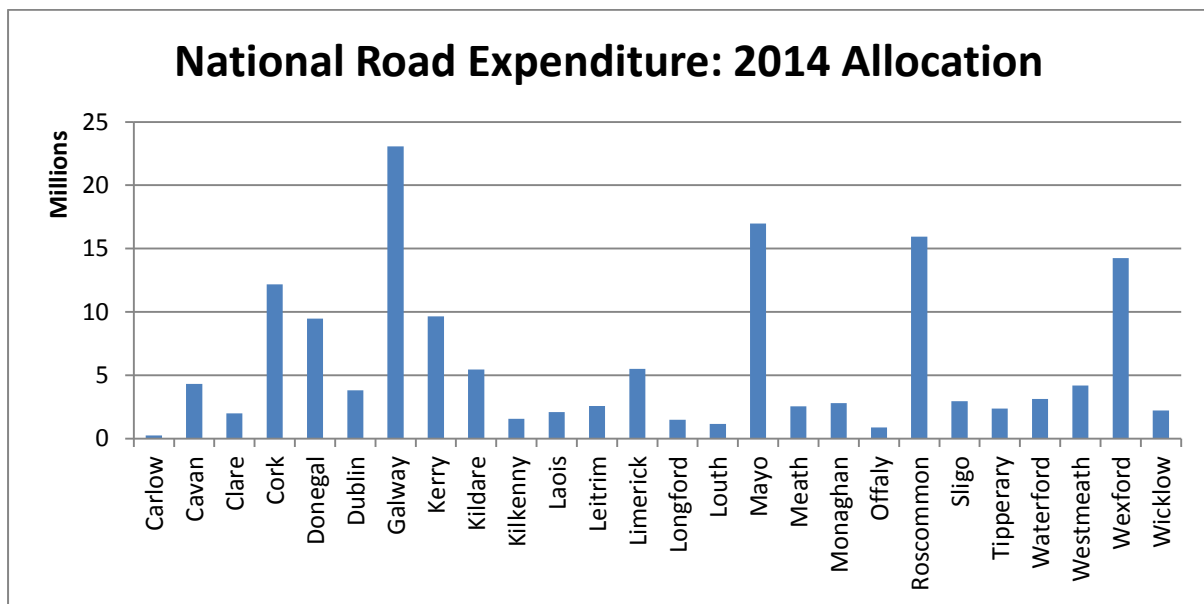


Figure 2



Figures 3 and 4 detail a per Km analysis which shows how much counties spent per Km on national roads. Between 2000 and 2013 the amount spent per Km in Dublin far outstripped expenditure in other counties with Kildare also having a relatively high level. As mentioned before, the main drivers of this were the extra cost of projects in urban areas, the strategic nature of the roads for the national economy and the swell in car demand witnessed in the GDA. Figure 4 shows that for the 2014 allocation there is a relatively even distribution of expenditure with certain counties, including Wexford, Roscommon and Galway, receiving higher levels of funding. The expenditure level for any one year is driven by the current needs and projects within a county.

Figure 3

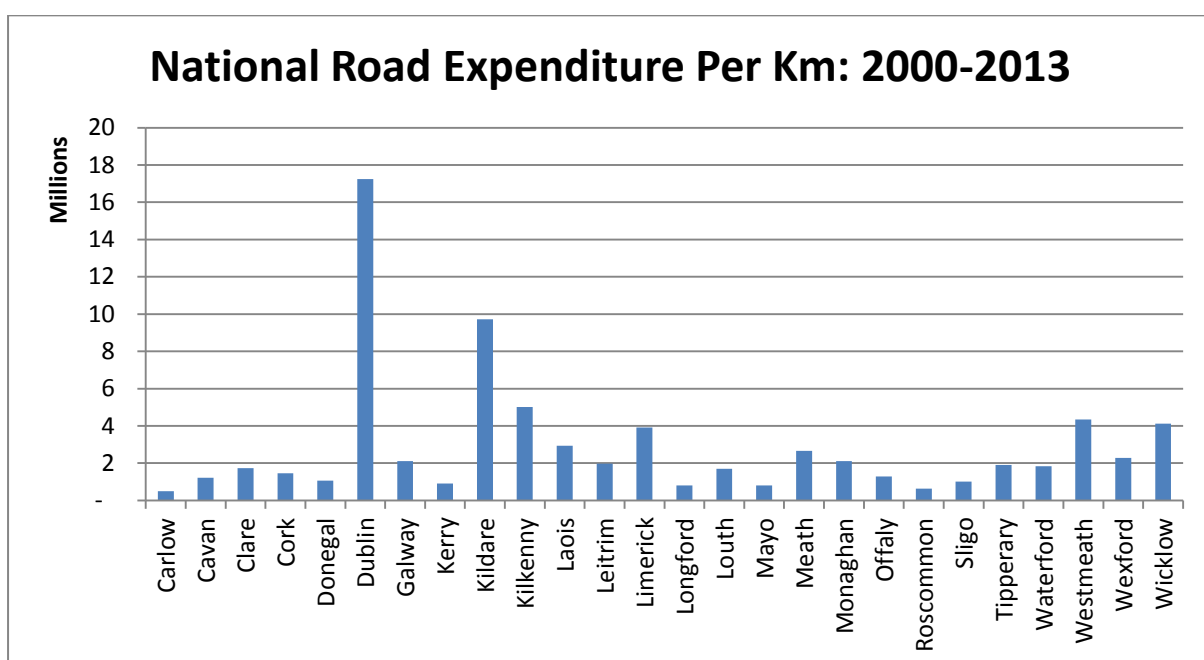
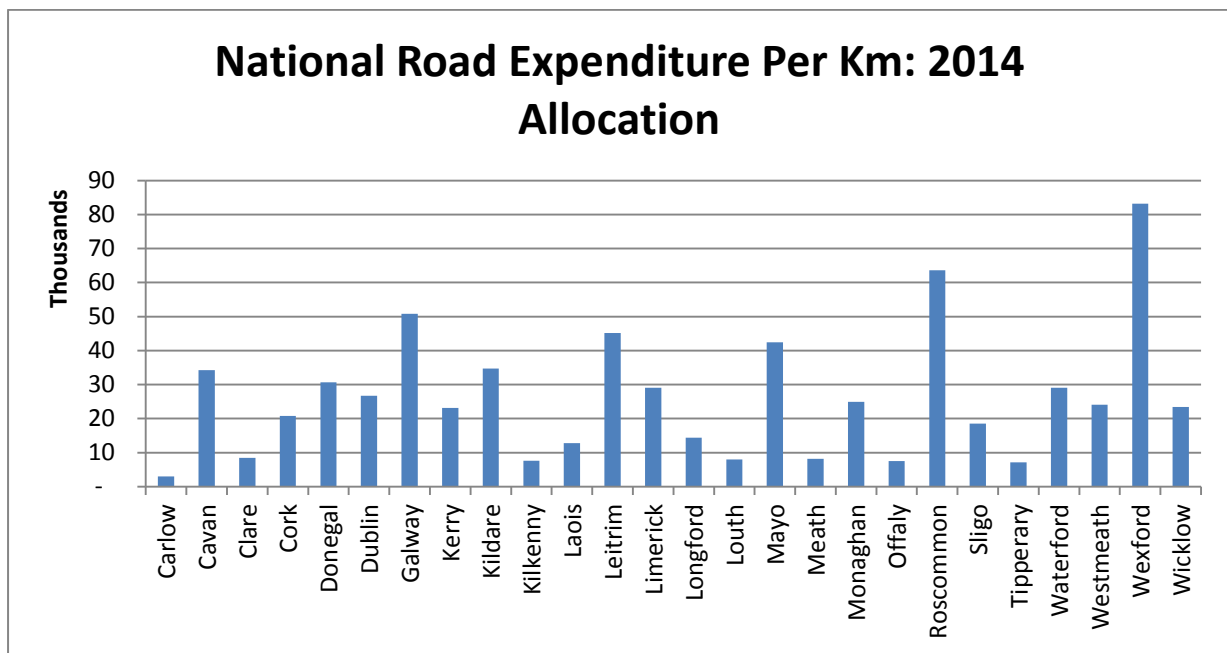


Figure 4



Figures 5 and 6 detail a per capita analysis of national road expenditure. This analysis is performed using 2011 census data for county populations. The analysis reveals a much more regionally spread allocation with Kilkenny and Westmeath receiving higher levels due to the construction of key strategic routes in these less populated areas. This analysis, coupled with that listed above, shows that while Dublin receives a high level of expenditure on a per km basis, this is justified by its much larger population - which drives increase demand - and its key role as an economic hub.

Figure 5

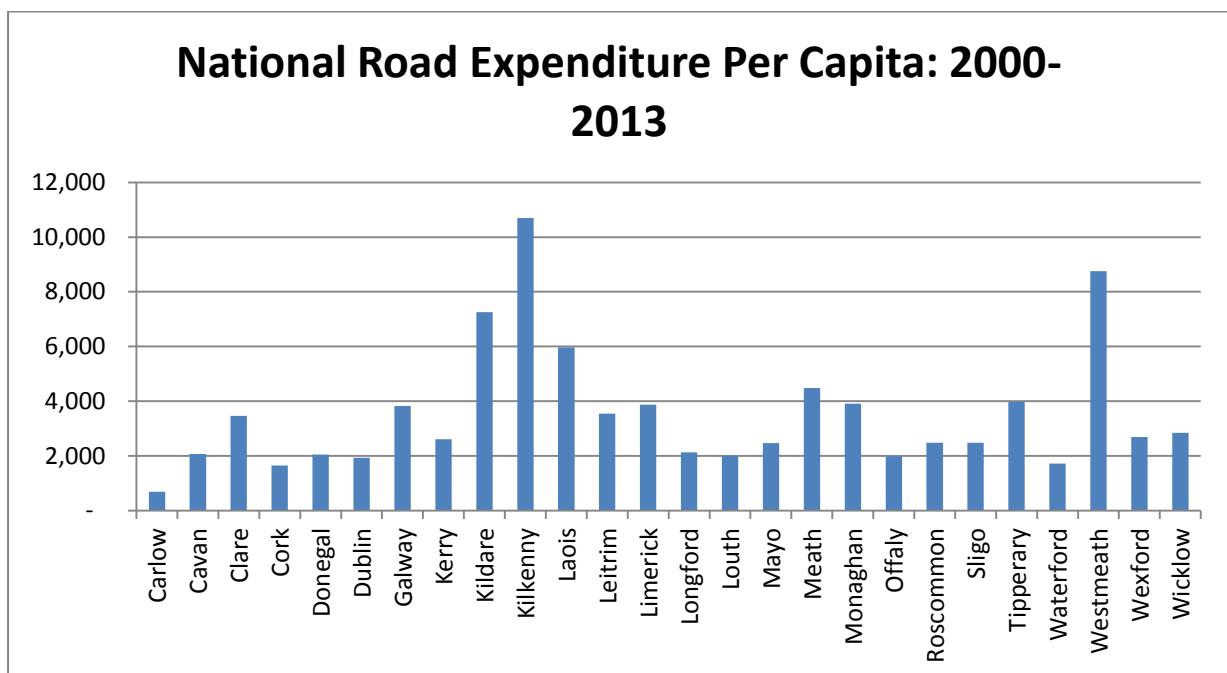
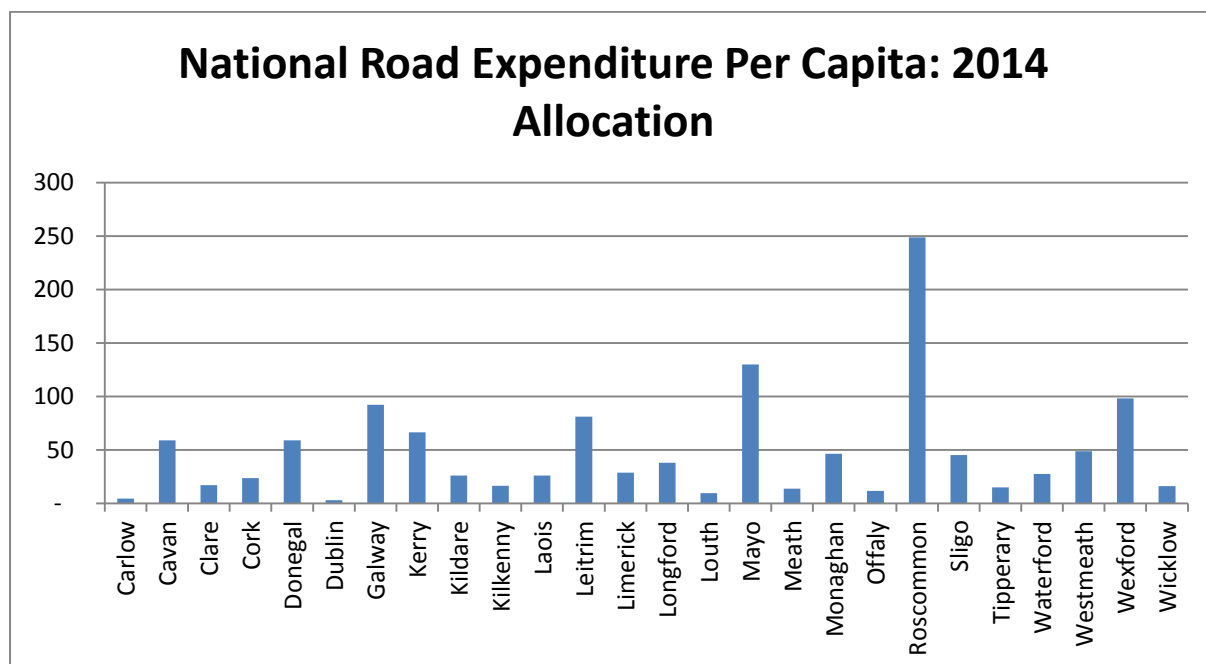


Figure 6



1.2 Regional and Local Road Expenditure 2000-2014

The county breakdown of regional and local expenditure between 2000 and 2013 is presented in Figure 7. Dublin and Cork stand out as the highest recipients of expenditure. This is mainly driven by the length of the road network in these counties and the strategic nature of these roads for national, regional and local economies. Figure 8 displays the county breakdown of the 2014 R&L road expenditure allocation. Again, Cork and Dublin are the main recipients of funding and this is driven by the factors outlined above.

Figure 7

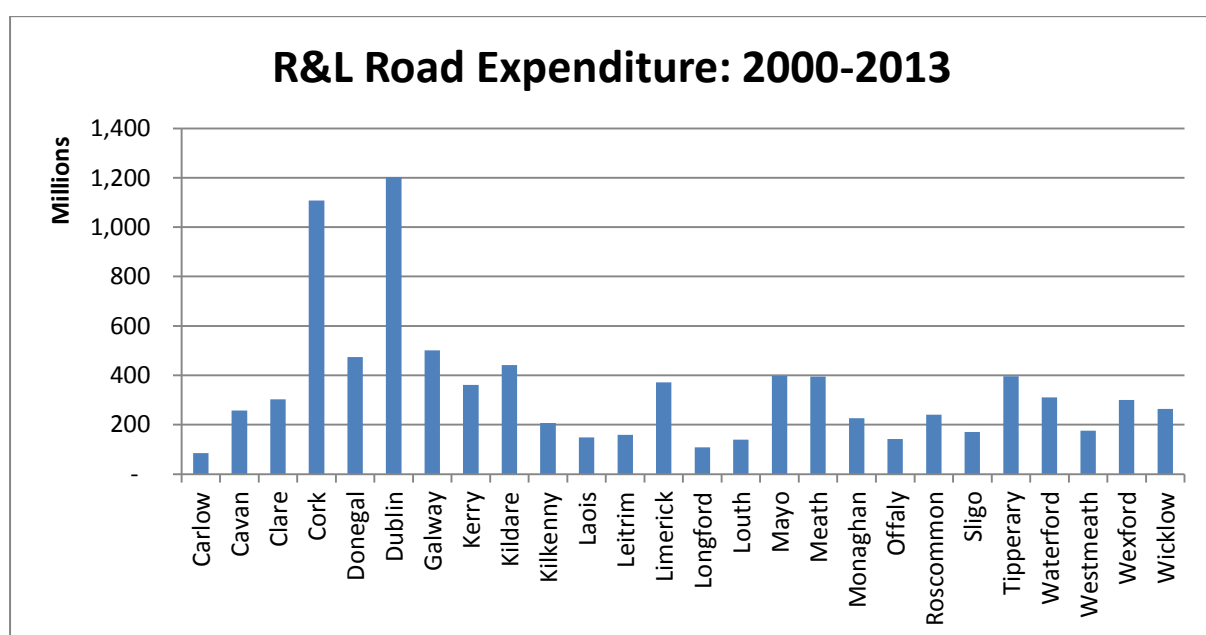
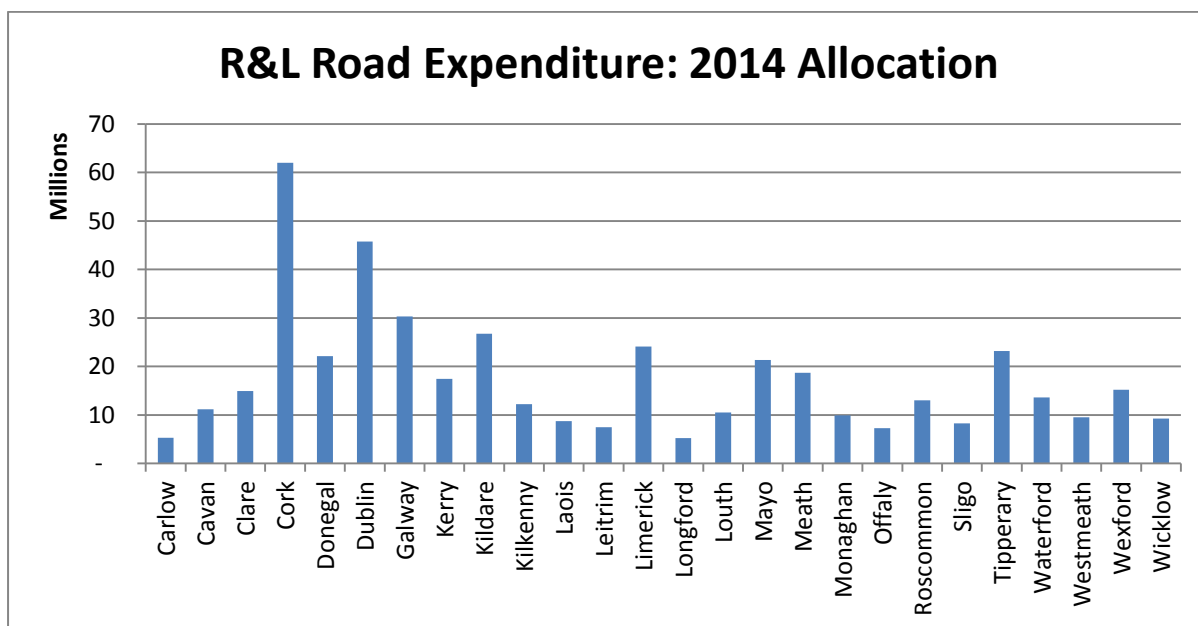


Figure 8



Figures 9 and 10 display the level of expenditure on R&L roads in counties on a per Km basis. Between 2000 and 2013 we see a relatively flat distribution across counties with the exception of Dublin and Kildare which received a higher per Km allocation. Figure 10 shows that in 2014 the allocation was relatively flat with Dublin and Kildare receiving more than other counties. Again, this is driven by the strategic nature of this section of the road network and the higher level of road use, demand and urban costs.

Figure 9

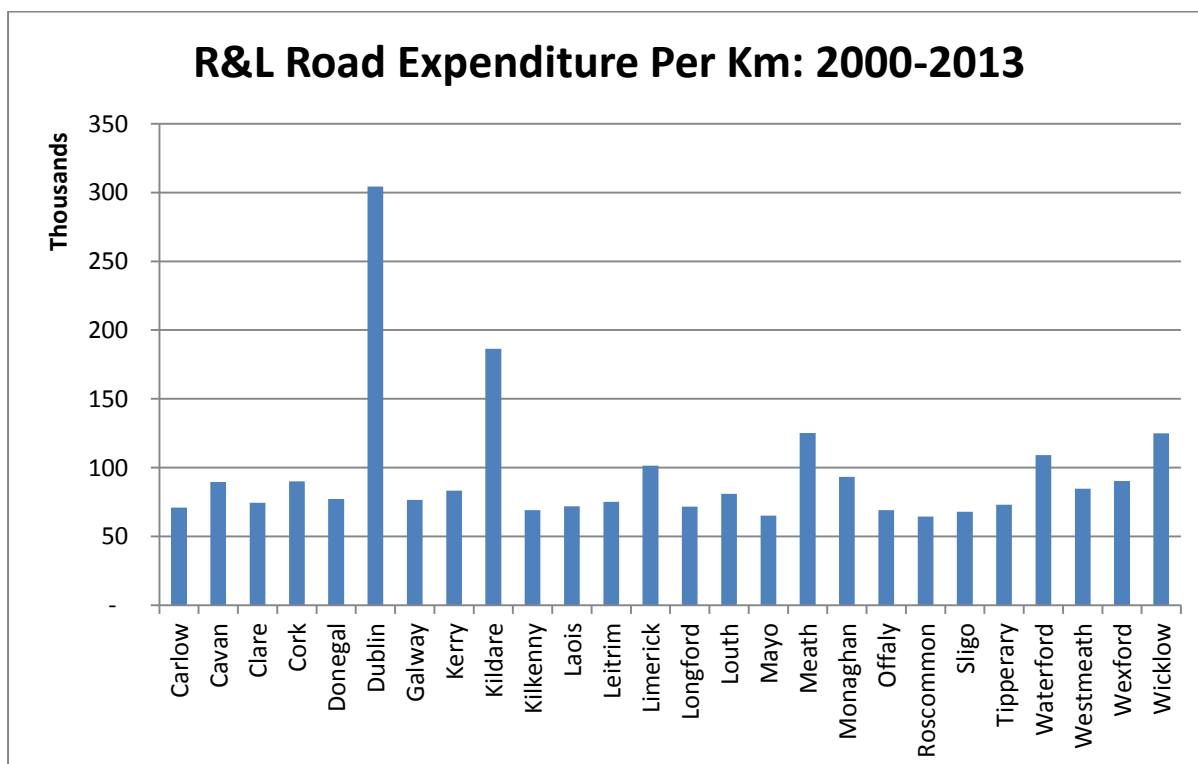
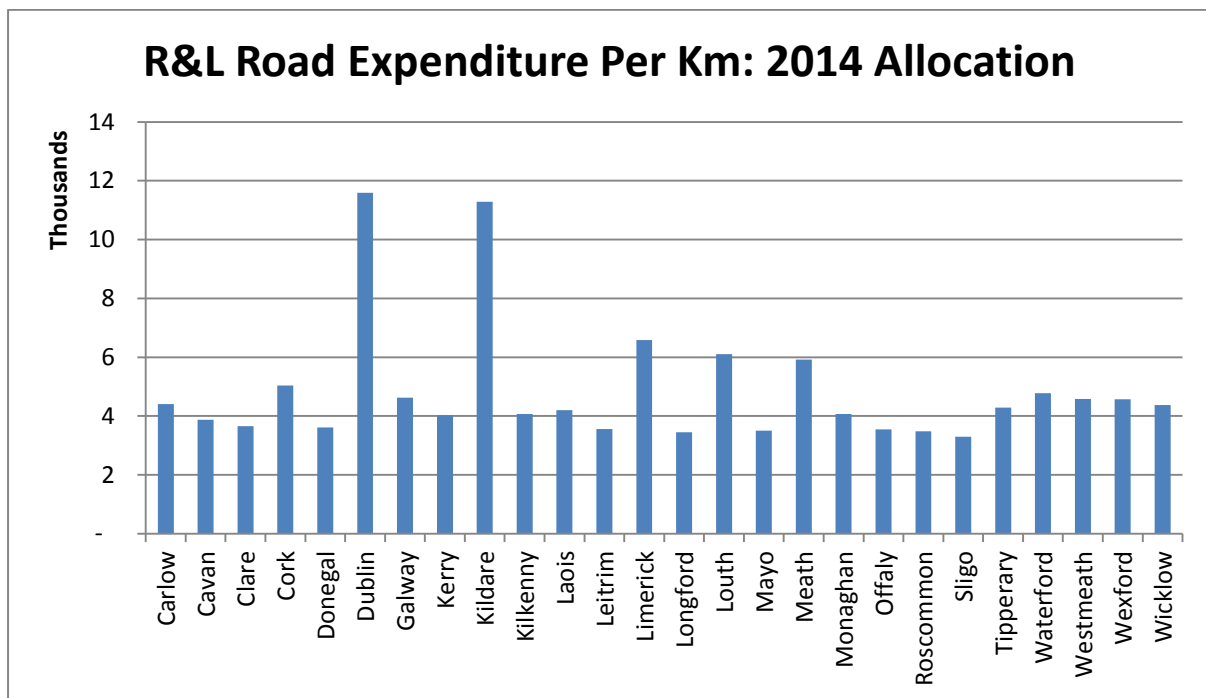


Figure 10



Figures 11 and 12 display an analysis of R&L spending on a per capita basis. In a similar fashion to national roads, the per km analysis seemed to show Dublin receiving a very large part of the expenditure. However, the per capita analysis, using 2011 census data, shows that Dublin large population, and thus high road demand, is at the heart of its expenditure allocation. Once again, less populated counties which have a strategic route running through them tend to get a higher per capita expenditure level.

Figure 11

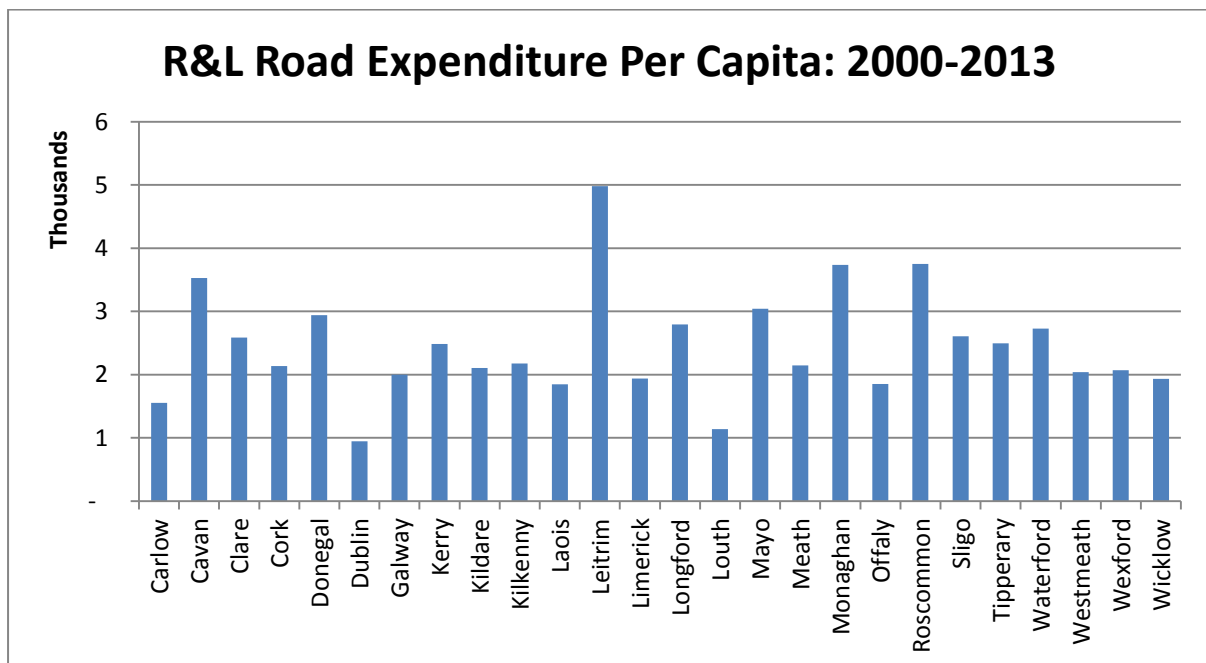
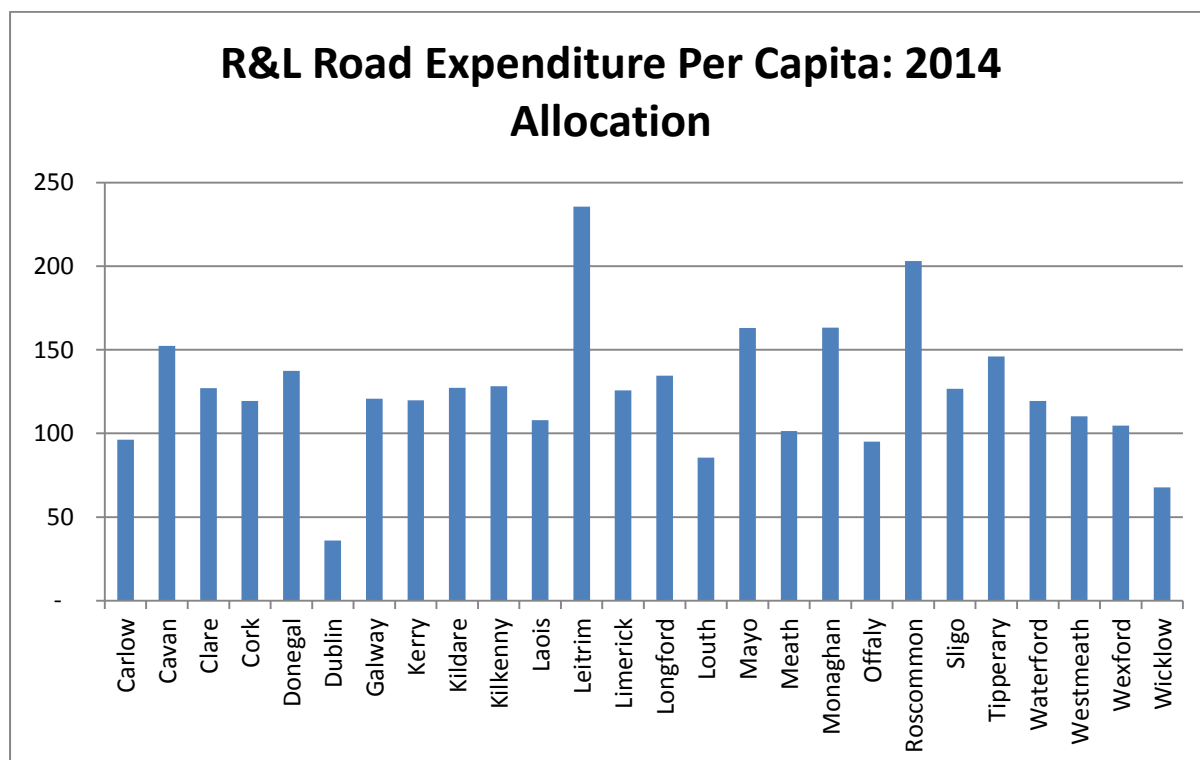


Figure 12



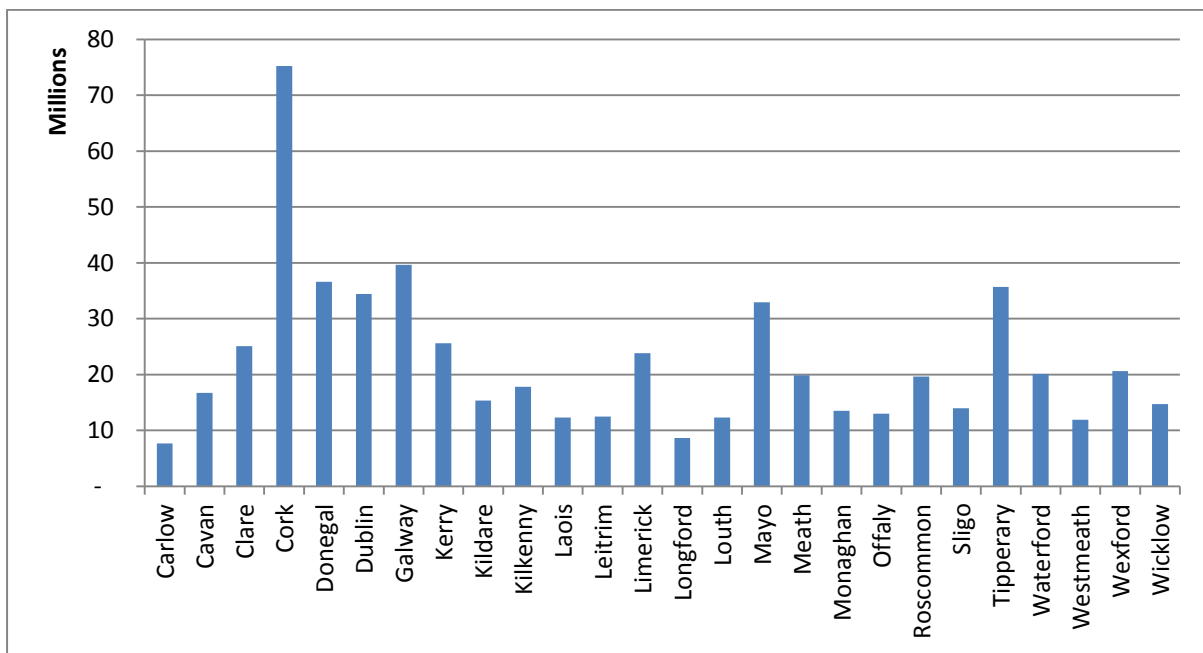
1.2.1 Notional Steady State Expenditure on Regional and Local Roads

As part of the Strategic Framework for Investment in Land Transport, the EFEU compiled a necessary level of steady state expenditure to maintain the transport system at its current condition. This amounted to €1.6 billion, with a total €1.3 billion exchequer funding requirement. As part of its analysis, EFEU completed a hypothetical breakdown by county of the steady state expenditure required for the Irish regional and local road network. The hypothetical breakdown was based on the application of unit rates for different types of maintenance to different categories of regional and local roads¹. The result of this analysis is displayed in Figure 13 below.

This analysis reveals that Cork will require the largest amount of steady state expenditure while counties such as Carlow, Laois and Longford will have a relatively small expenditure need. The disparities in expenditure requirements are driven by the varying lengths of road network that exist within each county. Cork is the county with the most kilometres - 12,298km and Carlow is the county with the least – 1,194km. In addition, road projects which have already been committed to in different counties contribute to this breakdown. Finally, just as road length impact expenditure needs, road type is also a significant driver with urban R&L roads being much more expensive to maintain on a unit basis than rural R&L roads. In addition while urban roads may have pavements which are appropriately designed, they are often subjected to road opening works by utilities and such works inevitably reduce the life of the pavement.

¹Rural- regional, local primary, local secondary, local tertiary and Urban- regional and local

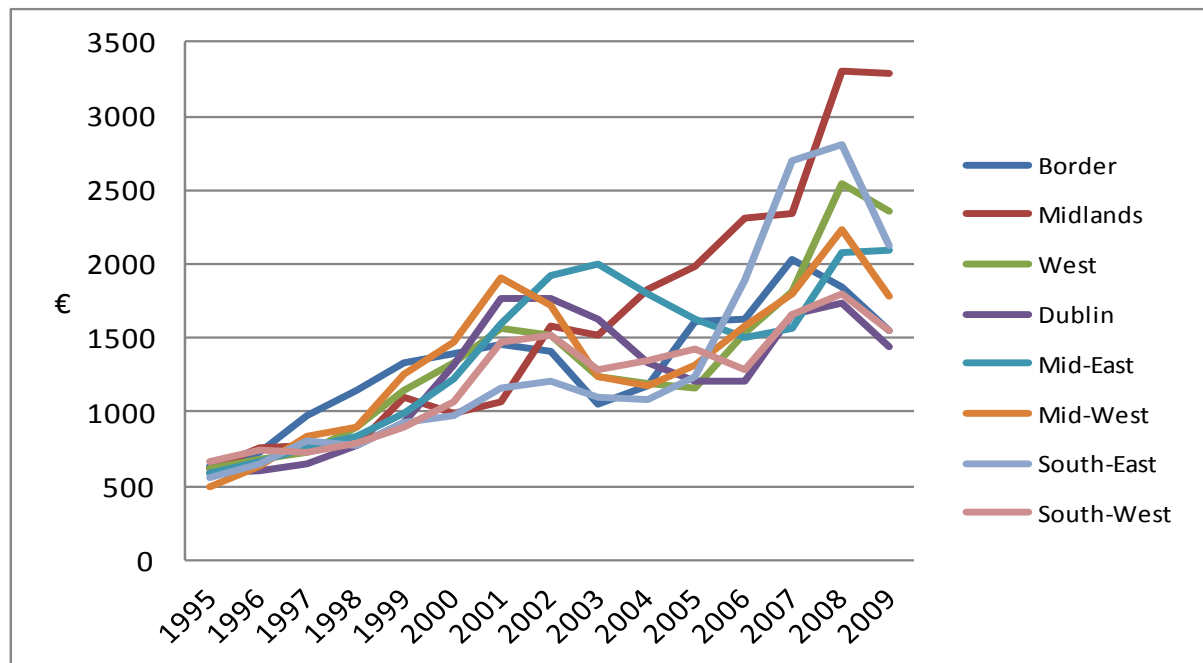
Figure 13: Steady State County Breakdown



2. Work by Edgar Morgenroth in SFILT Background Paper

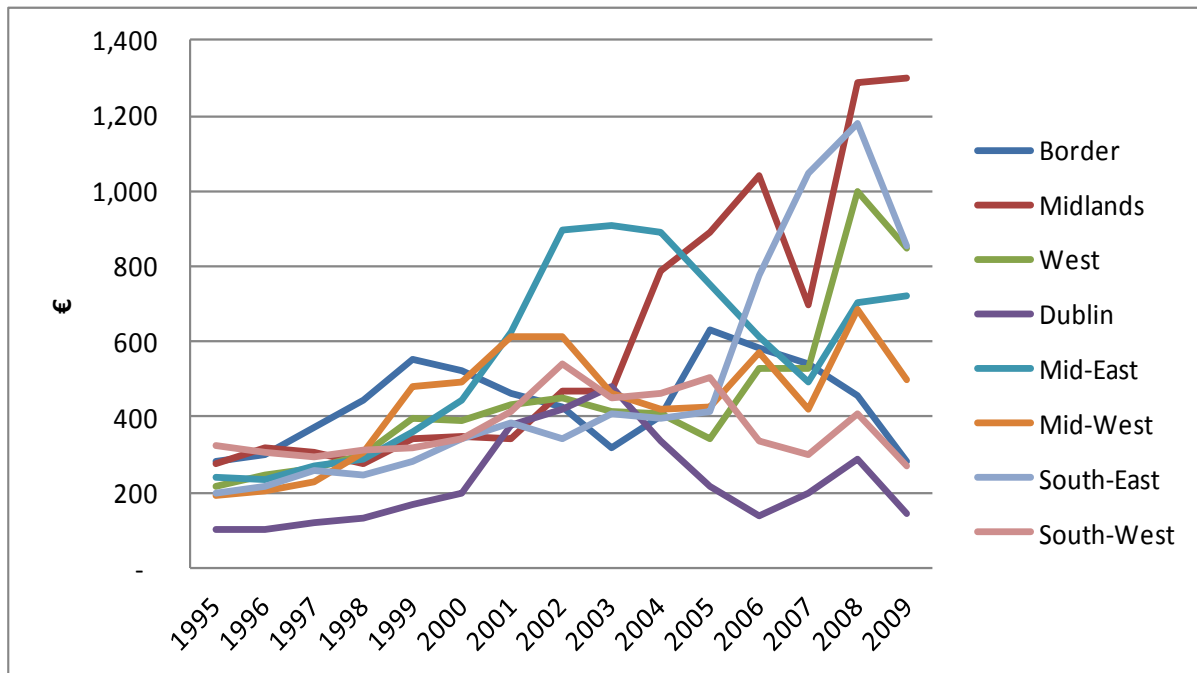
As part of the SFILT process, Edgar Morgenroth (ESRI) completed a background paper entitled 'The Regional Development Impacts of Transport Infrastructure: A Literature Review and Policy Implications'. The paper aims to set out the impact of transport investment on regional development. As part of the analysis a regional breakdown of transport infrastructure investment is provided. The following two figures are supplied (listed as figure 1 and figure 2 in background paper):

Real Per Capita Public Capital Expenditure by Region



Source: Own calculations based on Morgenroth (2010).

Real Per Capita Public Capital Expenditure on Roads by Region



Source: Own calculations based on Morgenroth (2010).

The first graph maps the per capita public capital expenditure on a regional basis for the years 1995-2009. The second graph details the per capita real expenditure on roads by region. Morgenroth makes the argument that investment in transport, and in particular in roads, is not disproportionately concentrated in Dublin. However, the expenditure is not evenly spread and is quite volatile over time.

It is important to clarify exactly what ‘Public Capital Expenditure’ relates to. This data was compiled by Morgenroth to produce a consistent set of regional government accounts that corresponds as closely as possible to the national accounts for the whole economy. To construct the data Morgenroth attained regional account data and then distributes the remaining difference, between the regional data and the national accounts, according to a set of assumptions, some of which were based on the now defunct Construction Industry Review and Outlook. Thus, public capital expenditure relates to a regional breakdown of expenditure based on both regional and national data. This data is detailed in annex 1.

Morgenroth’s work looks at road expenditure on a per capita basis and comes to a very similar result to the work presented here. Thus, by coupling these analyses we have a quite comprehensive picture of how road funding was spent in Ireland over this period.

3. Conclusion

The analysis produced here by DTTaS reveals the county breakdown of future funding needs to maintain a steady state network. In addition it also reveals a county level analysis of where funding has been spent in the past. While certain sections of the network do receive more funding per Km than others, notably Dublin and Kildare, this is driven by the strategic importance of these sections of the network for the national economy. In addition, varying road lengths and costs depending on location and type of road drive a disparity between the levels of expenditure in each county.

Annex 1 – Data for Regional Analysis

Table 1 – National Roads Expenditure

County	2000-2013	2014 Allocation
Carlow	37,675,000	234,597
Cavan	151,925,548	4,306,888
Clare	406,613,000	1,988,481
Cork	854,115,605	12,174,146
Donegal	329,279,347	9,471,246
Dublin	2,453,300,000	3,801,850
Galway	958,285,305	23,076,405
Kerry	379,725,488	9,638,701
Kildare	1,526,034,407	5,452,000
Kilkenny	1,021,300,000	1,560,991
Laois	481,102,549	2,094,615
Leitrim	112,801,132	2,573,234
Limerick	743,149,313	5,516,666
Longford	83,159,120	1,478,495
Louth	246,270,162	1,151,793
Mayo	322,644,097	16,971,748
Meath	824,684,442	2,540,457
Monaghan	236,298,884	2,802,297
Offaly	152,548,709	885,423
Roscommon	159,126,259	15,939,391
Sligo	162,103,851	2,957,398
Tipperary	631,775,907	2,373,234
Waterford	196,377,533	3,124,620
Westmeath	754,210,950	4,187,261
Wexford	390,493,765	14,255,790
Wicklow	388,448,908	2,206,446
Total	14,003,449,281	152,764,173

Table 2 – Per Km Analysis on National Roads

County	National Roads (km)	2000-2013	2014 Allocation	Per KM 00-13	Per KM 2014
Carlow	78	37,675,000	234,597	486,129	3,027
Cavan	126	151,925,548	4,306,888	1,207,742	34,238
Clare	234	406,613,000	1,988,481	1,734,571	8,483
Cork	584	854,115,605	12,174,146	1,461,296	20,829
Donegal	308	329,279,347	9,471,246	1,067,702	30,711
Dublin	142	2,453,300,000	3,801,850	17,240,306	26,717
Galway	454	958,285,305	23,076,405	2,109,088	50,789
Kerry	417	379,725,488	9,638,701	910,390	23,109
Kildare	157	1,526,034,407	5,452,000	9,724,424	34,742
Kilkenny	204	1,021,300,000	1,560,991	5,005,882	7,651
Laois	164	481,102,549	2,094,615	2,938,228	12,792
Leitrim	57	112,801,132	2,573,234	1,978,967	45,144
Limerick	190	743,149,313	5,516,666	3,911,312	29,035
Longford	103	83,159,120	1,478,495	807,919	14,364
Louth	145	246,270,162	1,151,793	1,704,292	7,971
Mayo	400	322,644,097	16,971,748	806,340	42,415
Meath	311	824,684,442	2,540,457	2,654,561	8,177
Monaghan	112	236,298,884	2,802,297	2,105,638	24,971
Offaly	118	152,548,709	885,423	1,291,199	7,494
Roscommon	251	159,126,259	15,939,391	634,725	63,579
Sligo	160	162,103,851	2,957,398	1,015,892	18,534
Tipperary	333	631,775,907	2,373,234	1,900,021	7,137
Waterford	107	196,377,533	3,124,620	1,828,145	29,088
Westmeath	174	754,210,950	4,187,261	4,334,546	24,065
Wexford	171	390,493,765	14,255,790	2,280,122	83,241
Wicklow	94	388,448,908	2,206,446	4,124,318	23,427

Table 3 – Per Capita Analysis on National Roads

County	Population	2000-2013	2014 Allocation	Per Capita 00-13	Per Capita 2014
Carlow	54,612	37,675,000	234,597	690	4
Cavan	73,183	151,925,548	4,306,888	2,076	59
Clare	117,196	406,613,000	1,988,481	3,470	17
Cork	519,032	854,115,605	12,174,146	1,646	23
Donegal	161,137	329,279,347	9,471,246	2,043	59
Dublin	1,273,069	2,453,300,000	3,801,850	1,927	3
Galway	250,653	958,285,305	23,076,405	3,823	92
Kerry	145,502	379,725,488	9,638,701	2,610	66
Kildare	210,312	1,526,034,407	5,452,000	7,256	26
Kilkenny	95,419	1,021,300,000	1,560,991	10,703	16
Laois	80,559	481,102,549	2,094,615	5,972	26
Leitrim	31,798	112,801,132	2,573,234	3,547	81
Limerick	191,809	743,149,313	5,516,666	3,874	29
Longford	39,000	83,159,120	1,478,495	2,132	38
Louth	122,897	246,270,162	1,151,793	2,004	9
Mayo	130,638	322,644,097	16,971,748	2,470	130
Meath	184,135	824,684,442	2,540,457	4,479	14
Monaghan	60,483	236,298,884	2,802,297	3,907	46
Offaly	76,687	152,548,709	885,423	1,989	12
Roscommon	64,065	159,126,259	15,939,391	2,484	249
Sligo	65,393	162,103,851	2,957,398	2,479	45
Tipperary	158,754	631,775,907	2,373,234	3,980	15
Waterford	113,795	196,377,533	3,124,620	1,726	27
Westmeath	86,164	754,210,950	4,187,261	8,753	49
Wexford	145,320	390,493,765	14,255,790	2,687	98
Wicklow	136,640	388,448,908	2,206,446	2,843	16

Table 4 –Regional and Local Roads Expenditure

County	2000-2013	2014
Carlow	84,823,430	5,255,900
Cavan	258,053,940	11,145,850
Clare	303,101,186	14,892,618
Cork	1,108,491,680	62,008,008
Donegal	473,489,035	22,147,391
Dublin	1,202,109,886	45,766,399
Galway	501,174,350	30,273,732
Kerry	361,571,458	17,442,775
Kildare	442,166,979	26,767,280
Kilkenny	207,556,074	12,238,000
Laois	148,686,648	8,696,100
Leitrim	158,328,057	7,489,300
Limerick	371,584,191	24,105,018
Longford	108,955,804	5,246,050
Louth	139,506,592	10,520,057
Mayo	397,407,383	21,299,009
Meath	394,756,763	18,667,158
Monaghan	226,025,342	9,876,188
Offaly	142,046,697	7,292,943
Roscommon	240,311,552	13,005,692
Sligo	170,493,004	8,281,650
Tipperary	395,885,508	23,187,750
Waterford	310,395,265	13,592,326
Westmeath	175,595,044	9,492,300
Wexford	300,589,970	15,204,330
Wicklow	264,261,121	9,264,227
Total	7,836,525,559	405,604,868

Table 5 – Per Km Analysis of R&L Roads

County	Total R&L Roads (m)	Expenditure 2000-2013	2014 Allocation	Per Km 00-13	Per KM 2014
Carlow	1,194	84,823,430	5,255,900	71,041	4,402
Cavan	2,880	258,053,940	11,145,850	89,588	3,869
Clare	4,073	303,101,186	14,892,618	74,418	3,656
Cork	12,298	1,108,491,680	62,008,008	90,133	5,042
Donegal	6,125	473,489,035	22,147,391	77,307	3,616
Dublin	3,949	1,202,109,886	45,766,399	304,390	11,589
Galway	6,550	501,174,350	30,273,732	76,520	4,622
Kerry	4,338	361,571,458	17,442,775	83,352	4,021
Kildare	2,372	442,166,979	26,767,280	186,448	11,287
Kilkenny	3,005	207,556,074	12,238,000	69,079	4,073
Laois	2,070	148,686,648	8,696,100	71,830	4,201
Leitrim	2,105	158,328,057	7,489,300	75,215	3,558
Limerick	3,659	371,584,191	24,105,018	101,545	6,587
Longford	1,521	108,955,804	5,246,050	71,615	3,448
Louth	1,723	139,506,592	10,520,057	80,959	6,105
Mayo	6,088	397,407,383	21,299,009	65,279	3,499
Meath	3,153	394,756,763	18,667,158	125,204	5,921
Monaghan	2,424	226,025,342	9,876,188	93,226	4,074
Offaly	2,054	142,046,697	7,292,943	69,149	3,550
Roscommon	3,730	240,311,552	13,005,692	64,426	3,487
Sligo	2,510	170,493,004	8,281,650	67,929	3,300
Tipperary	5,410	395,885,508	23,187,750	73,183	4,286
Waterford	2,847	310,395,265	13,592,326	109,034	4,775
Westmeath	2,071	175,595,044	9,492,300	84,788	4,583
Wexford	3,328	300,589,970	15,204,330	90,331	4,569
Wicklow	2,116	264,261,121	9,264,227	124,902	4,379

Table 6 – Per Capita Analysis of R&L Roads

County	Population	Expenditure 2000-2013	2014 Allocation	Per Capita 00-13	Per Capita 2014
Carlow	54,612	84,823,430	5,255,900	1,553	96
Cavan	73,183	258,053,940	11,145,850	3,526	152
Clare	117,196	303,101,186	14,892,618	2,586	127
Cork	519,032	1,108,491,680	62,008,008	2,136	119
Donegal	161,137	473,489,035	22,147,391	2,938	137
Dublin	1,273,069	1,202,109,886	45,766,399	944	36
Galway	250,653	501,174,350	30,273,732	1,999	121
Kerry	145,502	361,571,458	17,442,775	2,485	120
Kildare	210,312	442,166,979	26,767,280	2,102	127
Kilkenny	95,419	207,556,074	12,238,000	2,175	128
Laois	80,559	148,686,648	8,696,100	1,846	108
Leitrim	31,798	158,328,057	7,489,300	4,979	236
Limerick	191,809	371,584,191	24,105,018	1,937	126
Longford	39,000	108,955,804	5,246,050	2,794	135
Louth	122,897	139,506,592	10,520,057	1,135	86
Mayo	130,638	397,407,383	21,299,009	3,042	163
Meath	184,135	394,756,763	18,667,158	2,144	101
Monaghan	60,483	226,025,342	9,876,188	3,737	163
Offaly	76,687	142,046,697	7,292,943	1,852	95
Roscommon	64,065	240,311,552	13,005,692	3,751	203
Sligo	65,393	170,493,004	8,281,650	2,607	127
Tipperary	158,754	395,885,508	23,187,750	2,494	146
Waterford	113,795	310,395,265	13,592,326	2,728	119
Westmeath	86,164	175,595,044	9,492,300	2,038	110
Wexford	145,320	300,589,970	15,204,330	2,068	105
Wicklow	136,640	264,261,121	9,264,227	1,934	68

Annex 1 – Data from Section 2

Data for Real Per Capita Public Capital Expenditure by Region (Morgenroth Background Paper)

	Border	Midlands	West	Dublin	Mid-East	Mid-West	South-East	South-West	State
1995	637	618	610	581	593	492	556	669	596
1996	725	762	673	605	657	639	655	745	669
1997	976	768	724	643	750	830	796	732	752
1998	1,138	776	894	775	833	892	778	790	845
1999	1,331	1,092	1,145	927	997	1,256	927	892	1,032
2000	1,399	986	1,333	1,309	1,227	1,470	973	1,074	1,237
2001	1,456	1,061	1,557	1,769	1,598	1,903	1,160	1,468	1,557
2002	1,409	1,581	1,518	1,771	1,923	1,722	1,214	1,522	1,610
2003	1,046	1,517	1,236	1,619	1,999	1,245	1,094	1,284	1,415
2004	1,178	1,824	1,184	1,327	1,797	1,171	1,084	1,341	1,339
2005	1,606	1,989	1,167	1,209	1,620	1,308	1,232	1,424	1,382
2006	1,621	2,308	1,526	1,208	1,502	1,584	1,886	1,281	1,500
2007	2,034	2,343	1,815	1,662	1,565	1,790	2,697	1,660	1,870
2008	1,840	3,296	2,536	1,734	2,083	2,232	2,799	1,797	2,124
2009	1,544	3,281	2,352	1,443	2,099	1,785	2,124	1,545	1,847

Data for Real Per Capita Public Capital Expenditure on Roads by Region (Morgenroth Background Paper)

	Border	Midlands	West	Dublin	Mid-East	Mid-West	South-East	South-West	State
1995	280	275	213	104	242	189	194	325	208
1996	301	320	247	99	235	201	213	305	214
1997	369	307	264	116	268	229	260	293	236
1998	444	274	300	133	289	305	246	310	261
1999	550	340	393	165	361	482	284	320	323
2000	523	346	388	195	442	494	344	339	347
2001	461	340	431	377	625	611	382	417	442
2002	424	467	453	418	895	610	340	540	501
2003	316	469	413	482	910	463	408	451	488
2004	403	789	406	334	889	421	398	464	469
2005	629	889	344	214	754	429	416	506	455
2006	582	1,039	529	137	611	572	775	333	467
2007	542	697	530	197	495	418	1,046	302	457
2008	455	1,290	996	286	702	683	1,182	408	630
2009	280	1,302	848	141	719	499	853	272	488

