

# Road Safety Remedial Measures Programme

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Evaluation of Programme 7 to 10  
Schemes Implemented between  
2002 & 2005

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**RS 474**

Road Safety Engineering

# **Road Safety Remedial Measures Programme**

Evaluation of Programme 7 to 10  
Schemes Implemented between  
2002 & 2005

June 2010

F. Bohane

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## **ACKNOWLEDGEMENTS**

Many people contributed to the success of these programmes. Particular thanks are due to the NRA Road Safety Section, the NRA Regional Road Safety Engineers and the many Local Authority engineers who have identified and submitted the schemes and subsequently implemented the appropriate remedial measures.

## **FOREWORD**

This report is the fourth in a series of periodic reviews on the NRA road safety programme, and it presents the results for the road safety remedial schemes that were completed between 2002 and 2005. Preliminary results for 2006 and 2007 are shown but sufficient time has not yet elapsed to fully evaluate these two years.

The results have exceeded targets set for the rate of return for the schemes.





## **EXECUTIVE SUMMARY**

The National Roads Authority (NRA) was formally established as an independent statutory body under the Roads Act, 1993 with effect from 1st of January, 1994.

The Authority's primary function, under the Roads Act 1993, is 'to secure the provision of a safe and efficient network of national roads'. For this purpose, it has overall responsibility for planning and supervision of construction and maintenance works on these roads.

The NRA Road Safety Section is charged with a number of tasks under the last Government Road Safety Strategy. These tasks include to have an annual programme of road safety remedial schemes on national roads and to carry out a periodic Before & After review of these road safety remedial schemes.

Since 1994 the Authority has operated a programme whereby, for limited financial outlay, deficiencies at high risk collision locations can be identified and remedied. The works concerned are intended to enhance the safety of the roads system through changes in road layout, junction control and improvements in signage and road markings. The results of Programme 1 to 6 are available on the NRA website. (RS456, RS465 & RS473)

This report analyses the Before & After results for Programmes 7 to 10. It also lists the schemes undertaken in Programmes 11 and 12, but sufficient 'After' time has not yet elapsed to fully analyse these schemes

This report outlines the road safety remedial schemes that have been undertaken in Ireland on National Roads since 2002. It lists the schemes undertaken each year and summarises the performance of the road safety remedial schemes completed up to 2005. The report also provides an overview of the effectiveness of the different types of schemes up to 2005 with a view to ensuring future programmes deliver value for money. The collision data is not yet available for subsequent years. The report measures the effectiveness of the programmes based on collision data for a 5 year before period and a 3 to 5 year after period.

## **ROAD SAFETY REMEDIAL SCHEMES**

The target of the road safety remedial programme was to reduce by 30 to 40% the number of collisions occurring at treated sites and to achieve a first year rate of return of 100%.

The first in the series, Programme 1- 1994/1995, had 128 road safety remedial schemes completed at a cost of £1.34 million. In the four year after period there was a reduction of 25 Fatal and 41 Serious injury collisions relative to the before figures. This represented a saving of 6 fatal and 9 serious injury collisions per annum in the after period. This represents 18% fewer collisions. An annual average rate of return of 595% was achieved compared to the target of 100%.

Programme 2- 1996/1997 had 151 road safety remedial schemes completed at a cost of £1.83 million. In the 3 year after period there was a reduction of 18 Fatal and 43 Serious injury collisions relative to the expected numbers. In the three years following completion of the works, there were 108 fewer collisions at these sites than in the equivalent before period. This represents 31% fewer collisions. An annual average rate of return of 408% was achieved compared to the target of 100%.

Programme 3 to 6 –1998 to 2001 had 248 road safety remedial schemes completed at a cost of €8.1million. In the 5 year after period there was an overall reduction of 73 Fatal collisions, 40 Serious and 131 Minor injury collisions. For an outlay of just under €8.1 million there was an overall cost saving of €184 million. The target of a First Year Rate of Return of 100% was exceeded each year.

The target of reducing collisions by between 30 to 40% was not achieved in any of the Programmes. The reasons for this are the subject of further review.

All of the above programmes have had a detailed analysis done on the implemented schemes and are available on the NRA website.

This current analysis is a review of programme 7 to 10 – 2002 to 2005 where 417 road safety remedial schemes were completed. The results of the schemes that were assessed are shown below.

Year of Treatment	Programme No.	Number of Schemes Assessed	Cost (€M)	After period (Yrs)	Accident Savings (-Reduction, +Increase)			Annual Average Rate of Return	%Fewer Collisions (-Reduction, +Increase)	Cost Saving in After Period (€M)
					Fatal	Serious	Minor			
2002	7	54	1.7	5	-18	-31	-62	607%	-34%	53
2003	8	71	1.5	5	-17	-7	-35	549%	-19%	41
2004	9	91	1.6	4	-15	-2	-57	595%	-31%	37
2005	10	82	1.5	3	-2	-8	-26	158%	-17%	7
2006	11	99	2.5	2	-7	-13	-53	*		
2007	12	54	1.6	1	1	-1	-10	*		
<b>Total of Programmes 7 TO 10</b>			<b>6.3</b>		<b>-52</b>	<b>-48</b>	<b>-180</b>			<b>138</b>

\* The after period is considered too short for assessment

The above table shows that in the after period assessed for Programmes 7 to 10 there was an overall reductions of 52 Fatal collisions, 48 Serious and 180 Minor injury collisions. For an outlay of just under €6.3 million there was an overall cost saving of €138 million. The target of a First Year Rate of Return of 100% was exceeded each year. The target of reducing collisions by between 30 to 40% was only achieved for 2 of the 4 years.

The Authority will continue to research, recommend, and implement engineering road safety schemes with our counterparts in the local authorities around the country. These engineering solutions will assist in minimising risk factors across the national road network.

The delivery of the Major Inter-Urban road network – motorways from Dublin to the border, Galway, Limerick, Cork and Waterford – has helped to dramatically reduce the number of fatalities and injuries on national roads. However, in the light of the current slowdown in economic growth and anticipated budget cuts in the next few years, the road building programme of recent years is unlikely to be sustained and the need to leave those currently unimproved sections of road safe until they can be improved / bypassed will be a major challenge for the Road Safety Section and the National Roads Authority.

Enquiries relating to any aspect of this report should be directed to:

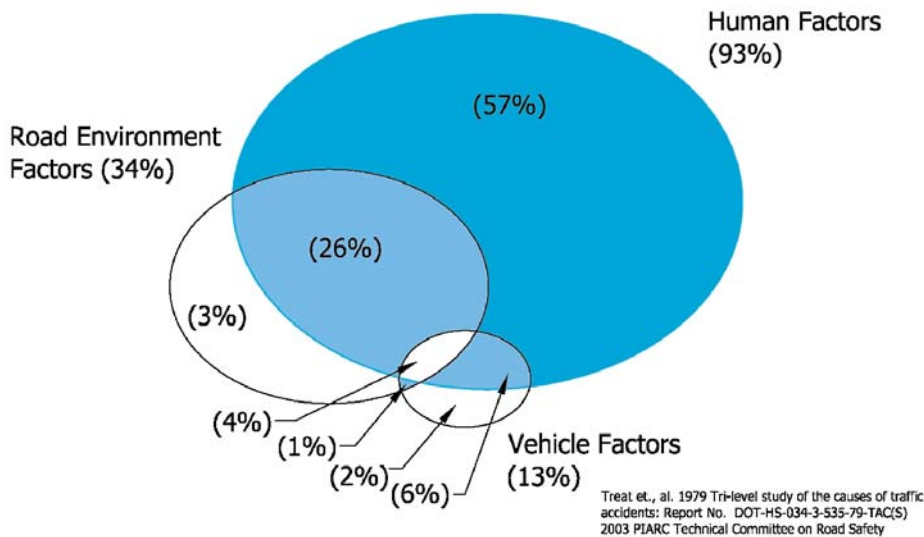
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# 1 INTRODUCTION

## 1.1 Background

Most road traffic collisions are caused by excessive speed and/or human error, although the road environment is also a contributory factor. See Figure 1 below.

**Figure 1 Tri-Level Study of the cause of Collisions.**



Engineering works to reduce collisions on the existing network are implemented through the road safety remedial programmes and traffic calming programmes and are funded by the National Roads Authority.

The location of these collisions and the prioritising of these schemes is based on an analysis of the Garda collision database, which we receive from the Road Safety Authority.

The National Roads Authority is committed to considering the potential for collision reduction in all aspects of its work. Within the road safety remedial programme we undertake work at individual sites and along routes to reduce collisions.

Under the terms of the Governments 'Road to Safety Strategy' 2007-2012 the Authority is required to undertake a number of specific tasks, including the implementation of an engineering countermeasures programme. Under this programme, the Authority has undertaken to complete an annual programme of road safety remedial schemes.

The assessment of Programme 1 to 6, schemes completed in 1994 and 2001, can be found on the NRA web site ([http://www.nra.ie/Publications/Road\\_Safety/CurrentRoadSafetyPublications](http://www.nra.ie/Publications/Road_Safety/CurrentRoadSafetyPublications)).

This report assesses the effectiveness of the road safety remedial programmes which have been completed since then.

A road safety remedial scheme is where an engineering solution is applied to a site with an identified road traffic collision problem. Table A summarises the total number of schemes that have been completed to date, and their cost.

**Table A- Road Safety Remedial Costs from 1993 to 2005**

Year	Programme Number	Number of Schemes Completed	Total Cost (€M) in the Year of Construction	Average Cost of a Scheme (€)
1994/95	1	128	1.7	€13,332
1996/97	2	151	2.36	€15,389
1998	3	93	1.73	€18,620
1999	4	100	2.1	€20,966
2000	5	74	2.02	€27,239
2001	6	74	2.48	€33,523
2002	7	76	2.06	€27,101
2003	8	104	2.03	€19,518
2004	9	123	2.47	€20,100
2005	10	114	2.28	€19,971
2006	11	150	4.38	€29,200
2007	12	106	3.78	€35,660
2008	13	86	2.7	€31,395

## 1.2 Key Facts

Table B details the total number of collisions and the number of people killed and injured in these collisions on our roads in 2008

**Table B- 2008 Road Collision Facts**

<b>Persons Killed</b>	297
<b>Persons Injured</b>	9758
<b>Total Casualties</b>	10037
<b>Fatal Collisions</b>	254
<b>Injury Collisions</b>	6477
<b>Total Collisions</b>	6798

Ref 1

## 1.3 Scope

The general guideline parameters for putting schemes into the programme were that each scheme should have an identifiable collision pattern, with at least one reported injury collision per year in the before period. The scheme should have the potential to reduce collisions by 30 to 40% and cost in the region of €1,000 to €50,000.

## 1.4 Target

Proposed road safety remedial schemes are prioritised on a first year economic rate of return (FYERR) basis. This compares the expected value of the expected collision reduction with the estimated cost of the remedial works. For the period covered in this report the minimum FYERR level to attract funding was 100%.

### 1.5 Collision Reports

The Garda Collision report forms (CT68) are forwarded by An Gardai to the Road Safety Authority (RSA), who then compile the annual Road Collision Facts document based on the forms. They also forward the raw CT68 data to the Authority. The Authority enter the data into a GIS environment and identify collision clusters in the data. These clusters are then analysed by the Road Safety Engineers and the resultant schemes form the core of work for the following year. The original of the collision report form is forwarded by the RSA on to the relevant Local Authority. The RSA database is also distributed to the relevant local authorities through the Local Government Computer Services Board.

This system facilitates the identification, and analysis, of collision clusters as well as providing a history of collision statistics.

### 1.6 Road Safety Remedial Scheme Assessment

Programme 1	1994/1995 has been assessed in detail in "Evaluation of Programme 1", which was published in 2001.
Programme 2	1996/1997 is assessed in detail and is available on the NRA web site..
Programmes 3 to 6.	1998 and 2001 is assessed in detail and is available on the NRA web site.
Programmes 7 to 10 .	2002 to 2007 has each years schemes listed and their assessment summarised, where collision data available, in this report.



## 2 EVALUATION

### 2.1 Road Safety Remedial Schemes 2001-2005 – Programmes 7 to 10

Of the schemes completed under Programme 7 to 10 only a certain number of them have been assessed in this report. The reasons for the non assessment of some of the schemes is varied but in general includes the following:

- Schemes, such as improved pedestrian facilities, were granted funding even though there was no collision history associated with the scheme. This was done where it was felt that pedestrian safety would be improved by the implementation of such schemes. Some of the schemes listed in a particular year were a continuation on the previous year's schemes where additional funding was required.
- Some of the schemes listed in a particular year were a continuation on the previous years schemes where additional funding was required..
- Schemes did not indicate any collision history when the national database was checked. This can occur in the following instances:
  - a) where the relevant local authority has looked at the collision database in detail and corrected the location of collisions which may have been mapped incorrectly on the national database.
  - b) where the collisions that had occurred had not been reported to Gardai.
  - c) where a scheme was granted funding in association with other improvement works being carried out at that location by the local authority.

Table C details the number of schemes that were assessed each year.

**Table C– Total Costs of Assessed Schemes from 2002 to 2007**

Year of Treatment	Programme No.	Number of years used in the Assessment		Number of Schemes Assessed	Cost of assessed schemes. (Yr 2002 costs- Ref 3)
		Before	After		
2002	7	5	5	54	€1,740,382
2003	8	5	5	71	€1,498,047
2004	9	5	4	88	€1,572,586
2005	10	5	3	77	€1,465,035
2006	11	5	2	92	€2,234,420 *
2007	12	5	1	54	€1,589,900 *

\*Enough after collision data is not available to fully assess Program 11 and 12

Location maps and detailed information on the schemes assessed between 2002 and 2007 are given in Appendix 1& 2

### 2.2 Methodology of assessment

All costs were converted to year 2002 figures to enable comparison between the various years. Figures for this were taken from the CSO. Ref (7)

Collision costs for 2002 are taken from the Goodbody Report, 2004. Ref (6).

The assessment did not take into account collisions that occurred in the year of construction as the exact date of completion of the scheme was unknown.

Results were controlled for collision trends on the Irish national road network. A Statistical test “the k test” was done on the data. The “k test” is another way of showing the degree of changes that have occurred at a site and whether the change was an increase or decrease. If  $k > 1$  there is an increase relative to controls. Ref (4).

The controls used were the National Road network trends. .

### **2.3 Controlling for Confounding Factors**

Most studies that evaluate the effect of road safety remedial measures are observational the most common of which is the before-and -after study. These studies take a comparison of the before and after collision figures at the treated sites and make an assessment of the effectiveness of the measure. It is believed by some that simple before-and-after studies, which do not control for any confounding factors should never be trusted as they can result in misleading figures.

For example, the general collision trend in a region may have increased or decreased which would have an effect on the after results at a treated site. A confounding factor is one that is not influenced by the road safety measure but has an effect on the collision rate at a site, and a resultant effect on the evaluation of the remedial measure.

This report takes account of the general collision trend on Ireland’s national roads through out the before and after periods, and makes allowances for them in the assessment of the effectiveness of the road safety remedial schemes. In this case it is reasonable to assume that the comparison group (the relative increase/decrease in collision trends on Ireland’s national roads over the same assessment period) captures the effects on collisions of traffic increases/decreases. Ref (2)

### **2.4 Regression to mean**

The random nature of road collisions tends to cause collision frequencies at specific locations to fluctuate. The selection of sites for treatment on the basis of their past collision record can introduce a source of potential bias in measuring the effectiveness of road safety remedial schemes. This arises as the selection process tends to introduce sites at the peak of their fluctuations in collision frequencies, and such sites may tend to experience reductions in collision frequency even if no treatment is applied.

This effect is commonly referred to as “regression to mean”. An allowance for the effect of the regression to mean could be made by comparing the change in collision frequency at treated sites against a number of similar untreated control sites. This, however, would involve not treating sites with an identified collision history, which is felt would be unacceptable.

A study by Mountain et al (1998) suggested that up to half the observed reduction in collisions at treated sites could be due to the regression to mean effect. Ref (3).

Another study by Rune Elvik (2002) calculated the effect of “regression-to mean” for a number of different types of road safety measures. Its effect was calculated as a reduction of 20-30% in three of the seven road safety measure types studied, but was negligible in the other four road safety measure types. Ref (2).

This report does not take account of regression to mean but, as an exercise, Appendix 3 shows the effect on the overall results assuming a worst-case scenario of an effect of 30% for all scheme types. The findings still shows an overall positive result.



**2.5 Economic Evaluation**

The “willingness to pay method” is taken to be the most appropriate economic evaluation tool, since it takes account of the benefits arising from reductions in collision severity as well as reductions in frequency.

The effectiveness is analysed by comparing the changes in the before and after period and taking account of the national trends over the same periods of time where available. The overall results are detailed in the chart below.

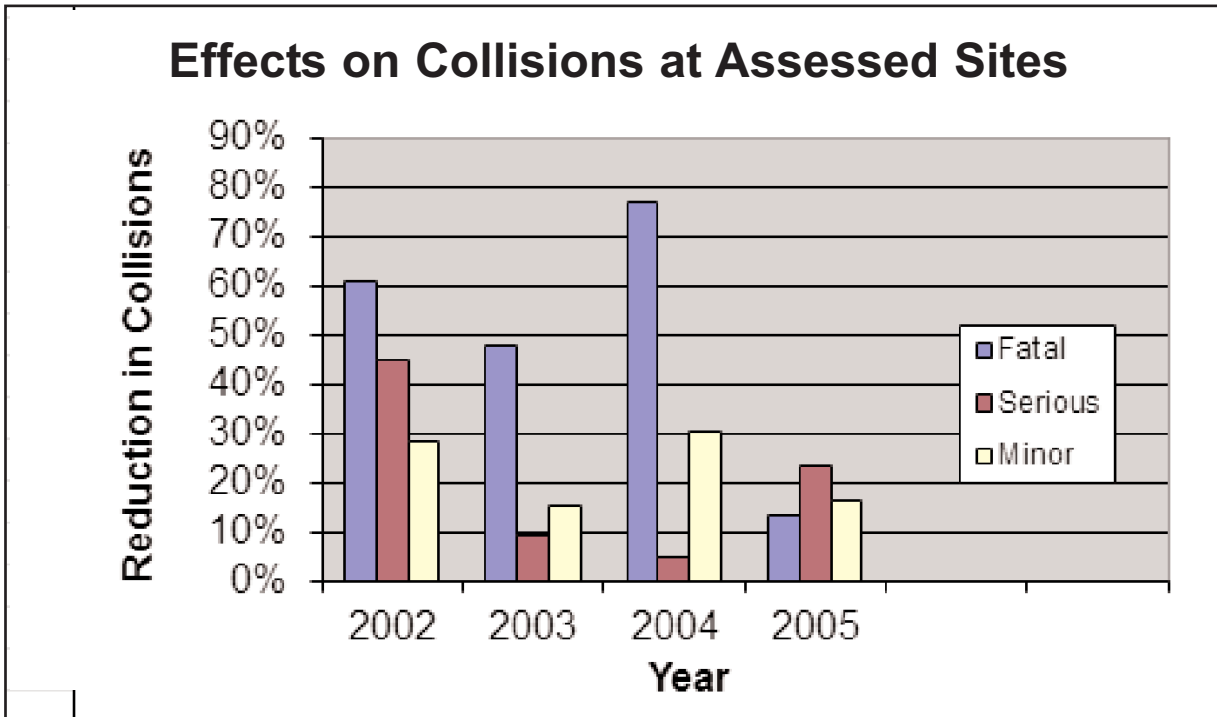


Table D indicates the cost saving, the rate of return and the reduction/increase in number of collisions at the sites for each of the Programme years assessed

**Table D: Annual Average Rate of Return**

Year of Treatment	Programme	%Reduction in Collisions (-Reduction, +Increase)			Total Cost Saving in assessed period	Annual Average Rate of Return	%Fewer Collisions (-Reduction, +Increase)
		Fatal	Serious	Minor			
2002	7	-61%	-45%	-28%	€40,521,683	607%	-34%
2003	8	-48%	-9%	-15%	€39,647,555	549%	-19%
2004	9	-77%	-5%	-30%	€35,872,481	595%	-31%
2005	10	-13%	-23%	-16%	€5,490,115	158%	-17%
2006	11	-47%	-39%	-33%	€18,351,081	*	*
2007	12	49%	-37%	-48%	-€3,087,500	*	*
* the after period is considered too short to assess					Average	477%	

The results show that for the annual expenditure of approximately €1.5 M, an Average Annual Rate of Return of 477% has been achieved. This is well in excess of the target first year rate of return of 100%.

Table E indicates the Annual Reduction in Collisions for the Programme Years Assessed

**Table E: Annual Reduction in Collisions**

Year of Treatment	Programme	Collision Saving / Year ( -Reduction +Increase )		
		F	S	M
2002	7	-3.6	-6.3	-12.4
2003	8	-3.3	-1.3	-7.0
2004	9	-3.8	-0.6	-14.2
2005	10	-0.5	-2.8	-8.7
<b>Total</b>		<b>-11</b>	<b>-11</b>	<b>-42</b>

Programme 11 & 12 had less than three years of 'after' data available for analysis which is considered too short a time period for assessment.

The combined effect of Programmes 7 to 10 at a total cost of €6.3m is an annual saving of €30.5M in collision costs, arising from an annual reduction in the after periods of approximately 11 fatal, 11 serious and 42 minor injury collisions. See Table F.

Table F indicates the Annual Collision Cost Saving for the Programme Years Assessed

**Table F: Annual Collision Cost Savings**

Total Cost Saving in Collisions / Year	Number	Cost Of Collision (€)	Total Cost (€M)
F	11	2,280,000	25.9
S	11	304,600	3.3
M	42	30,000	1.3
<b>Total</b>			<b>30.5</b>

## 2.6 Results by Solution Type

The solutions applied to individual schemes often involved two or more different measures. The most common combination was lining and signing. For the purpose of this assessment a primary solution was given to each scheme based on the information available for the schemes. This is called the Short Solution Description.

The assessment can be seen in Table G

**Table G: Rate of Return by Solution Type**

Urban/Rural Area	Short Solution Description	Number of schemes	Total Cost	Avg Cost	% Over all Expenditure	Rate of Return
Urban	Antiskid plus other	18	€569,958	€31,664.33	8%	272%
Urban	Junction Realignment	4	€104,420	€26,104.96	2%	921%
Urban	Pedestrian Facilities	16	€299,455	€18,715.93	4%	36%
Urban	Signing and lining	15	€228,282	€15,218.81	3%	-782%
Rural	Antiskid plus other	5	€151,043	€30,208.69	2%	174%
Rural	Crash Barrier plus other	8	€163,039	€20,379.86	2%	150%
Rural	Junction Definition	6	€302,777	€50,462.89	4%	72%
Rural	Lighting plus other	7	€355,387	€50,769.54	5%	1162%
Rural	Road widening/narrowing plus other	7	€247,138	€35,305.41	4%	-141%
Rural	Right turn lane plus other	4	€1,709,506	€41,695.27	25%	278%
Rural	Side road adjustment	8	€152,588	€19,073.56	2%	-649%
Rural	Sight Distance	24	€740,002	€30,833.41	11%	617%
Rural	Signing & Lining	111	€1,313,381	€11,832.27	19%	702%
Rural	Surfacing & Signing & Lining	9	€501,343	€55,704.75	7%	340%
		<b>TOTAL</b>	<b>€6,838,320</b>			

The above results show that some solution types have been much more effective in reducing collisions than others.

The best results were shown in Rural Areas - they were Crash Barrier, Lighting, Sight Distance & Signing and Lining schemes.

Signing & Lining in Urban Areas, Rural Road Widening/Narrowing and Side Road Adjustment all shows a negative Rate of Return.

Regarding the outcome of the results based on solution type it is clear that further detailed analysis will need to be done on the schemes that have produced a negative rate of return to investigate why the solution type was not effective and if the scheme type that was implemented needs to be revised.

## 2.7 Statistical Analysis:

A statistical analysis, the Chi Squared test, was carried out to investigate if the change in collisions observed was likely to be a result of real change or due to random fluctuations. This test was done on the data for the years 2002 & 2003 where the full 5year before and after data was available. The result indicated that the probability of the after collision numbers occurring due to random fluctuation was in the order of 1%, for both years resulting in there being an almost 99% chance of a real reduction in risk between the before and after periods. See Appendix 4.

## 2.7 Examples of Road Safety Remedial Schemes

### Kilnamona (N20), Programme 10, 2005.



Before road safety remedial measure implemented

**Problem:**

Collisions involved vehicles turning right out of junction being hit from right.

**Collisions in the before period:**

2 Serious &  
2 Minor.



After road safety remedial measure implemented

**Measure implemented:**

Signing & Lining, High Friction Surfacing.

**Collisions in the after period:**

1 Minor

**Newhill (N8), Programme 9, 2003.**



**Before road safety remedial measure implemented**

**Problem:**

Collisions vehicles turning right into junction being hit from behind.

**Collisions in the before period:**

1 Fatal &  
1 Minor



**After road safety remedial measure implemented**

**Measure implemented:**

Right turn lane.

**Collisions in the after period:**

None

**Corracunna Cross (N8), Programme 8, 2003.**



**Before road safety remedial measure implemented**

**Problem:**

Collisions involving right turning vehicles being pushed into oncoming traffic.

**Collisions in the before period:**

- 1 Fatal,
- 2 Serious &
- 3 Minor.



**After road safety remedial measure implemented**

**Measure implemented:**

Right Turn Lane

**Collisions in the after period:**

None



### Knockdoe (N17), Programme 8, 2003



Before road safety remedial measure implemented

**Problem:**

Collisions involving turning at junction..

**Collisions in the before period:**

1 Fatal &  
6 Minor.



After road safety remedial measure implemented

**Measure implemented:**

Sight distance improvements and  
Signing and lining

**Collisions in the after period:**

1 Serious

### Church Cross (N71), Programme 8, 2003



Before road safety remedial measure implemented

**Problem:**

Variety of collisions occurring in hours of darkness.

**Collisions in the before period:**

- 1 Fatal,
- 2 Serious &
- 1 Minor.



After road safety remedial measure implemented

**Measure implemented:**

Lighting

**Collisions in the after period:**

None



**Clairn Bridge (N18), Programme 7, 2002.**



**Before road safety remedial measure implemented**

**Problem:**

Difficulty for pedestrians crossing the road.

**Collisions in the before period:**

1 Minor.



**After road safety remedial measure implemented**

**Measure implemented:**

Zebra Crossing with central refuge island.

**Collisions in the after period:**

1 Minor

## 3.1 CONCLUSIONS

The combined effect of Programmes 7 to 10 at a total cost of €6.3 m is an annual saving of €30.5m in collision costs, arising from an annual reduction in the 'after' periods of approximately 11 fatal, 11 serious and 42 minor injury collisions.

The results show that some solution types have been much more effective in reducing collisions than others.

The best results were shown in rural areas, they where Crash Barrier, Lighting, Sight Distance and Signing & Lining schemes.

Three of the 14 listed solution types showed an overall negative result -- they were Signing & Lining in urban areas , Road Widening/Narrowing in rural area and Side Road Adjustment in rural area. These schemes accounted for 10% of the schemes assessed. It is interesting to note that in the assessment of Programmes 3 to 6 – 1998 to 2001 two of these three solution types showed a positive result.

From the results outlined in the evaluation it is clear that the road safety remedial schemes as a whole are economically justified, exceeding the target 100% rate of return.

The second target though, of reducing the overall number of collisions at the treated sites, was not achieved. This shows that treatment of the sites have had a very positive effect in reducing the severity of collisions but not as good as expected at reducing the overall level of collisions at the sites. This will need to be reviewed when setting future targets.

Regarding the outcome of the results based on solution type it is clear that further detailed analysis will need to be done on the schemes that have produced a negative rate of return to investigate why the solution type was not effective and if the scheme types that were implemented need to be revised.

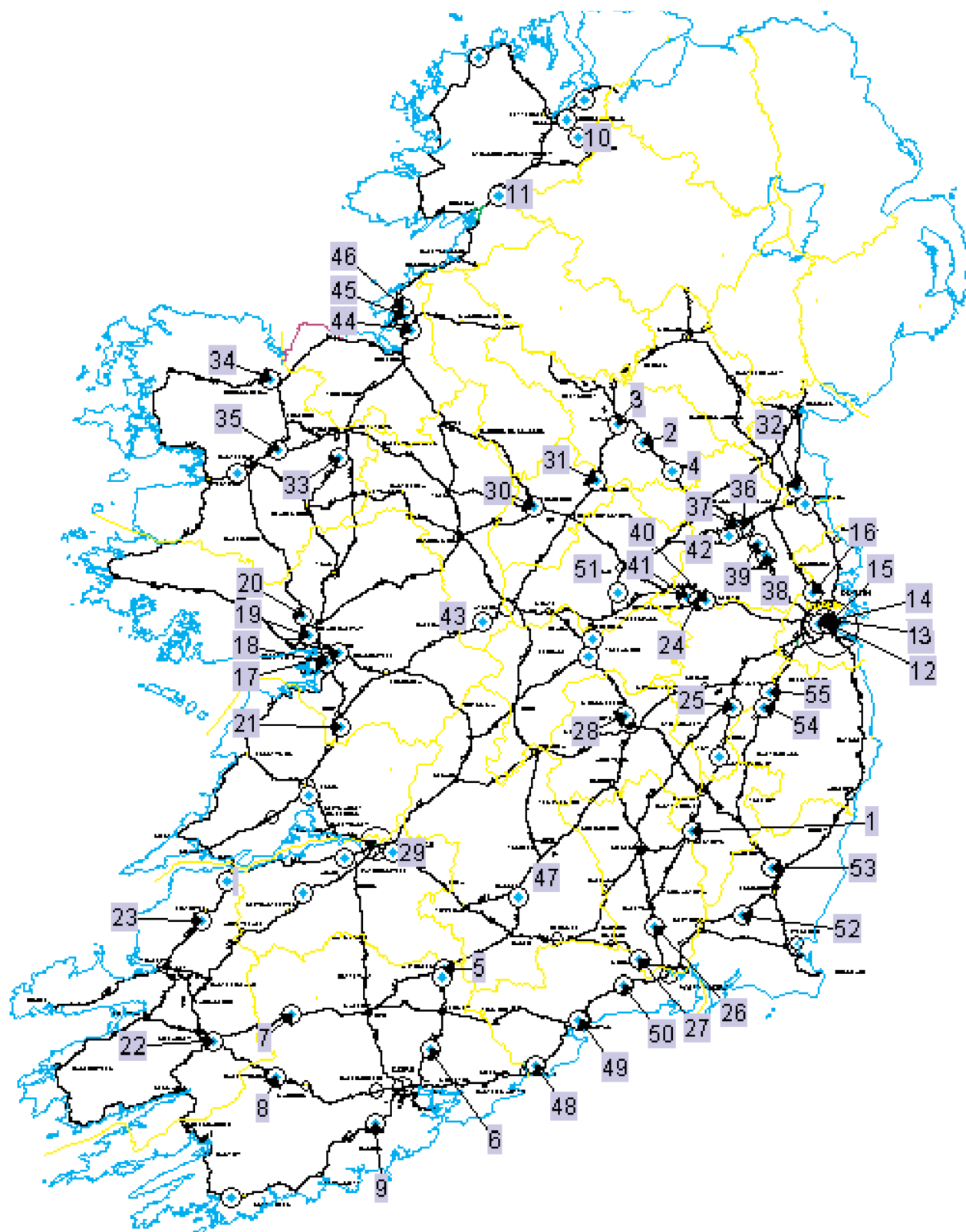
This report provides the basis for which road safety engineers can look back at solution types that have not performed well in order to assess if an alternative solution is required or whether engineering measures are not suitable to treat certain collision problems. It also helps in deciding on the best solution type for future schemes to ensure that future programmes deliver value for money.

In light of the current slowdown in economic growth and anticipated budget cuts in the next few years, the road building programme of recent years, which has delivered significant gains to road safety in Ireland, is unlikely to be sustained. The need to leave those currently unimproved sections of road safe until they can be improved / bypassed will be a major challenge for the Road Safety Section and the National Roads Authority.

## **APPENDIX 1 -**

**Site location maps and scheme details with collision data**

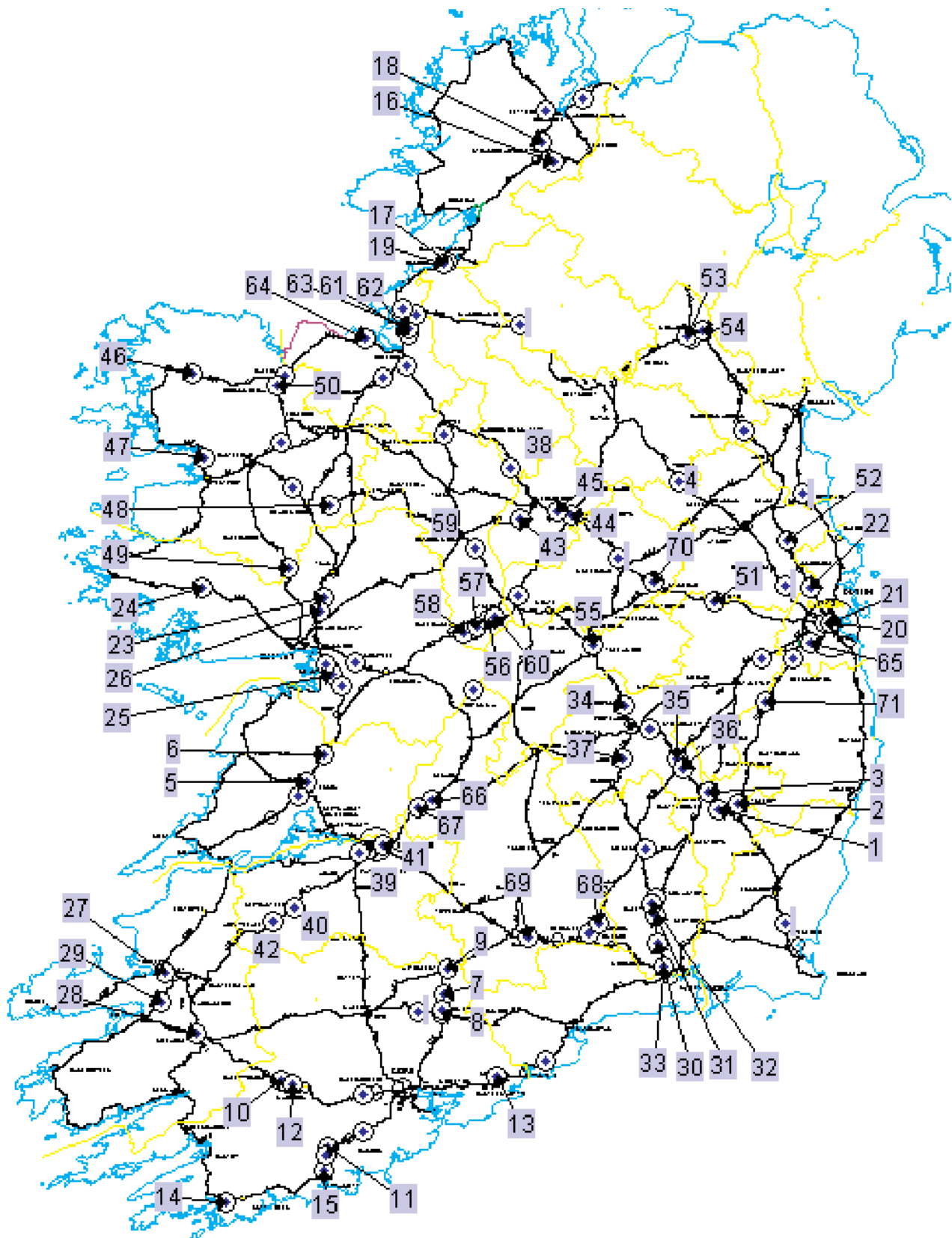
**Appendix 1 - Site location maps and scheme details with collision data**



2002 Assessed Scheme

55 Schemes Assessed in 2002			Total Cost in year of construction	€1,740,382	Before (5Yr data)			After (5yr data)		
			Number of collisions per year		6	14	44	2	4	27
Sch No	LA	Rt	Description	Cost	F	S	M	F	S	M
1	Carlow	9	Royal Oak Junction	€39,052	0	2	4	0	0	1
2	Cavan	3	Drumgora	€50,603	2	1	2	0	0	0
3	Cavan	3	Tullymongan - Pollamore	€42,611	1	7	9	0	0	9
4	Cavan	3	Maghera - Virginia	€133,242	3	2	15	0	1	7
5	<del>Cork N</del>	<del>8</del>	<del>Mitchelstown, Galtee Meats</del> Assessed in 2001	<del>€34,199</del>	<del>0</del>	<del>0</del>	<del>0</del>		<del>0</del>	<del>0</del>
6	Cork N	8	Condonstown	€10,945	0	0	4	0	0	0
7	Cork N	72	Forge Cross	€1,044	0	0	1	0	0	2
8	Cork S	22	Coolnacaheragh	€6,903	0	2	0	0	0	0
9	Cork S	71	Bends at Rigsdale	€6,883	1	0	3	0	0	0
10	Donegal	14	Drumbeg / Dromore	€26,693	2	1	2	0	0	0
11	Donegal	15	Keadew Bridge	€16,537	0	0	0	0	0	0
12	Dublin	11	College Green - Grafton St	€27,206	0	0	12	0	0	4
13	Dublin	3	Phibsborough Road / North Circular Road	€16,584	0	3	18	0	0	14
14	Dublin	4	South Circular Road - Con Colbert Road / St. John	€21,038	0	2	27	0	1	11
15	Dublin	4&11	Aston Quay - Westmoreland St	€28,531	0	2	17	0	1	5
16	Fingal	2	Wards Cross	€3,065	1	1	4	1	1	2
17	Galway	6	Coldwood	€15,147	0	3	1	0	0	1
18	Galway	18	Clarinbridge	€20,540	0	0	1	0	0	1
19	Galway	17	Cloonacauneen	€28,972	0	1	2	1	0	1
20	Galway	84	Cloonboo	€11,078	1	1	4	0	0	1
21	Galway	18	Lough Cultra	€35,305	1	2	6	1	0	2
22	Kerry	22	Minish Level Crossing	€4,870	0	0	4	0	0	2
23	Kerry	69	Six Crosses	€27,523	0	0	1	0	0	1
24	Kildare	4	Callaghy's Garage, Royal Oak	€61,200	0	2	1	0	0	0
25	Kildare	9	Halverstown Junction (School)	€4,500	0	1	3	0	0	1
26	Kilkenny	9	Lukeswell/Knockmolyan	€165,066	0	3	8	0	0	10
27	Kilkenny	24	Mooncoin to Clonmore	€19,467	0	1	2	1	0	0
28	Laois	80	Kyletaleasha / Rossleighan / Crookedy	€5,843	1	4	4	0	2	6
29	Limerick	24	Killonan Cross	€11,200	0	0	2	0	0	2
30	Longford	5	Main St. Longford	€12,765	0	1	1	2	1	1
31	Longford	55	Cloghchurnel Part 2	€9,974	1	2	1	0	0	1
32	Louth	1	Monasterboice to Killineer	€101,730	3	3	9	0	0	1
33	Mayo	17	Kiltimagh junction	€9,000	1	0	2	0	1	5
34	Mayo	59	Cloontykillow junction	€8,225	0	0	2	0	1	1
35	Mayo	5	Ballyvary	€10,320	0	0	2	0	0	1
36	Meath	3	Athlumney Junction	€46,599	1	0	1	0	0	3
37	Meath	3	Whistlemount	€3,074	2	1	1	0	0	1
38	Meath	3	Ross Cross (N3)	€203,003	0	0	4	1	0	6
39	Meath	3	Garlow cross	€115,286	0	0	1	1	0	2

55 Schemes Assessed in 2002			Total Cost in year of construction	€1,740,382	Before (5Yr data)			After (5yr data)		
			Number of collisions per year		6	14	44	2	4	27
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
40	Meath	4	Blackwater Bridge	€20,041	0	1	2	2	0	4
41	Meath	4	Leinster Bridge	€4,191	1	0	0	0	0	1
42	Meath	51	HallTown	€3,876	3	0	2	0	0	0
43	Roscommon	6	Thomastown (Shannonbridge jcn)	€7,000	0	0	1	0	0	0
44	Sligo	16	(N16) - (R286) Mollaway hill/ Ashlane - Hazelwood Rd (Sligo City)	€20,000	0	0	0	0	0	3
45	Sligo	15	Rathcormack Wall and Footpath Part 2	€43,526	0	1	2	0	0	3
46	Sligo	15	Road section along bend at Urlar Td	€39,723	1	1	3	0	2	3
47	Tipperary SR	8	Owens & Biggs Lo	€12,180	1	0	2	0	0	1
48	Waterford	25	Pilltown Cross (R671 / L-2007)	€8,840	0	3	2	1	0	3
49	Waterford	25	The Pike Hill	€4,223	0	6	2	0	4	3
50	Waterford	25	Carrolls Cross	€71,434	0	1	2	0	0	3
51	Westmeath	52	Carrick	€47,008	1	2	3	0	0	1
52	Wexford	30	Coolnacon (Teagasc Research Station)	€2,846	0	1	2	0	0	3
53	Wexford	80	Ballycarney - Junction with R745	€10,067	0	1	2	0	1	3
54	Wicklow	81	Knockroe	€6,349	0	3	6	1	1	1
55	Wicklow	81	Russborough Bends	€77,454	2	2	6	0	1	0



2003 Assessed Scheme

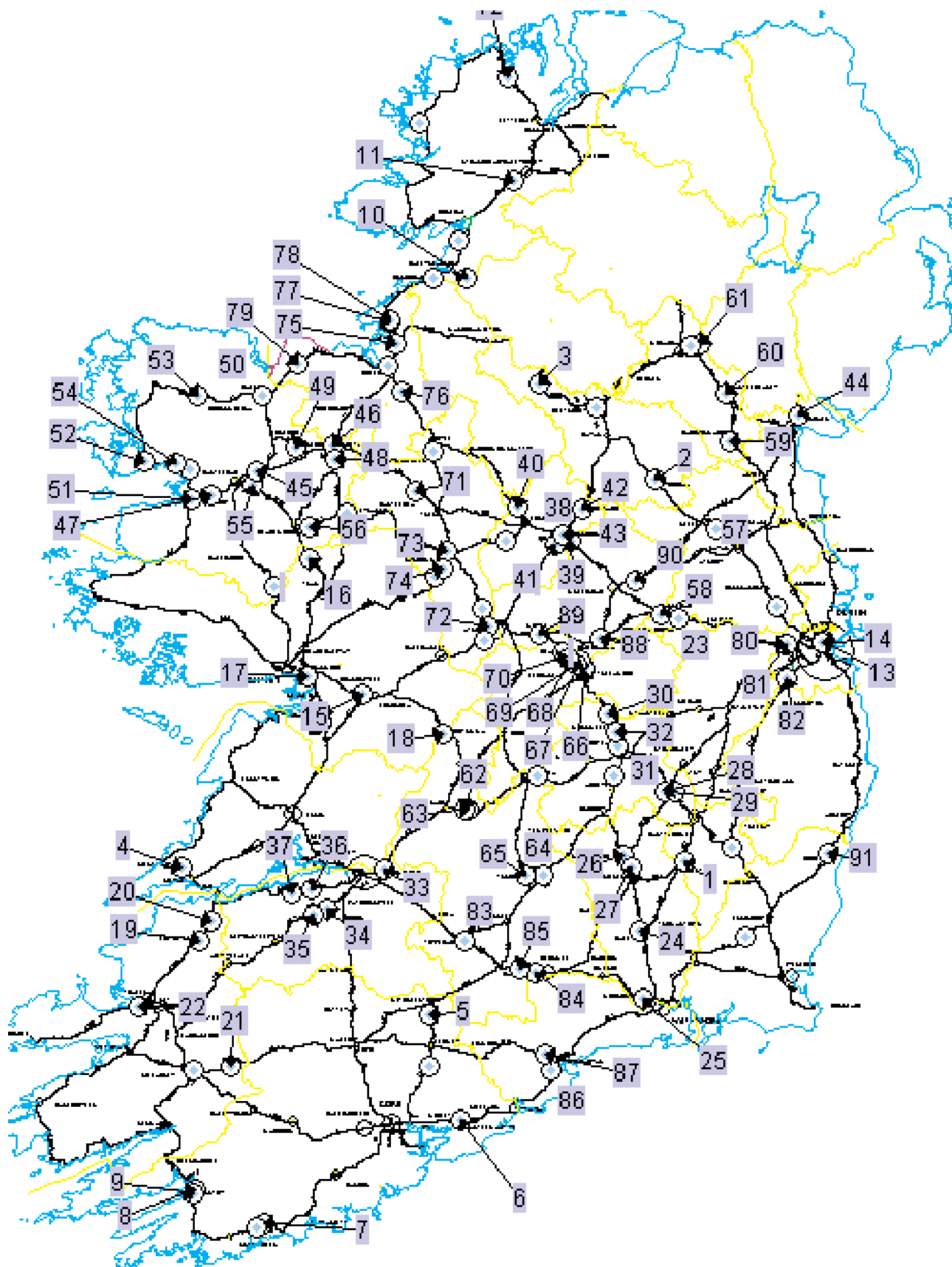
71 Schemes Assesed 2003			Total Cost in year of construction	€1,612,745	Before (5Yr data)			After (5yr data)		
			Number of collisions per year		7	14	45	3	7	34
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
1	Carlow	80	Graingenaspidogue	€12,123	0	0	1	0	0	2
2	Carlow	81	Road Widening outside Tullow	€18,978	1	2	3	1	1	1
3	Carlow	80	Wallsforge Junction	€18,525	0	1	5	0	1	5
4	Cavan	3	Road Widening from Maghera to Virginia (Part Funding)	€31,008	3	3	15	2	1	9
5	Clare	18	Gort Road, Ennis	€7,281	0	0	3	0	2	2
6	Clare	18	Crusheen	€55,120	1	0	0	0	1	7
7	Cork N.	8	South of Corbett Cross	€7,968	1	0	0	0	0	3
8	Cork N.	72	Patrick St Fermoy (Pedestrian Crossing)	€9,435	0	0	1	0	0	3
9	Cork N.	8	Coracunna Cross	€96,794	1	2	2	0	0	0
10	Cork S	22	Coolavokig	€4,472	0	4	7	1	1	4
11	Cork S	71	Bend & junction at Cashelmore	€3,638	1	1	1	0	0	2
12	Cork S	22	Bend & junction at Carrigaphooca	€5,788	1	1	0	0	1	0
13	Cork S	25	Killeagh	€8,923	0	0	1	0	1	1
14	Cork W	71	Church Cross, Skibbereen	€31,086	1	2	1	0	0	0
15	Cork W	71	Shannonvale Cross	€25,743	1	0	0	0	0	0
16	Donegal	15	Kiltown / Killygordon	€11,071	3	0	2	0	1	6
17	Donegal	15	Finner	€22,342	0	3	5	1	1	0
18	Donegal	13	Callan Junction	€26,739	0	1	4	0	0	0
19	Donegal	13	Bundoran Main St (straight)	€29,750	0	4	5	0	0	2
20	Dublin	4	Ushers Quay - Ushers Island approaching Bridgefoot St Lwr	€10,405	2	0	6	0	1	1
21	Dublin	1	Bachelors Walk - Eden Quay - O'Connell Bridge - O'Connell St	€16,552	0	3	6	0	0	10
22	Fingal	2	Coolquay Junction	€13,891	0	0	1	0	0	2
23	Galway	17	Caherlea Jn	€8,123	0	0	1	0	1	2
24	Galway	59	Maam Cross	€14,820	0	1	1	0	0	1
25	Galway	18	Kiltiernan	€14,711	0	2	6	1	0	6
26	Galway	17	Knockdoe	€21,693	1	0	6	0	1	0
27	Kerry	70	Skehanagh	€32,803	0	2	0	0	1	0
28	Kerry	72	Ballydowney to Fossa	€28,620	1	1	5	2	1	5
29	Kerry	70	Brackhill, Castlemaine	€54,903	0	0	5	0	0	0
30	Kilkenny	9	Deerpark	€7,819	0	1	4	0	0	4
31	Kilkenny	9	Castlebanny	€15,098	0	1	2	0	0	1
32	Kilkenny	9	Moanroe - Derrynahinch	€15,312	0	0	1	1	0	1
33	Kilkenny	9	Dunkitt to Grannagh	€18,406	1	2	2	0	0	3
34	Laois	80	Derrycloney	€5,153	0	1	5	0	0	0
35	Laois	80	N80 - N78 Simons Cross	€8,930	0	1	1	0	0	0
36	Laois	80	Glen Mor - Arles - Ballickmoyler	€15,115	1	2	2	0	0	8
37	Laois	8	Tonduff - Colt - Raheen - Bondra	€15,730	1	1	8	0	3	21
38	Leitrim	4	Killaniker Bridge N4	€25,177	0	0	1	0	1	0
39	Limerick	69	Boland's Cross	€4,842	0	1	0	0	0	1



71 Schemes Assesed 2003			Total Cost in year of construction	€1,612,745	Before (5Yr data)			After (5yr data)		
			Number of collisions per year		7	14	45	3	7	34
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
40	Limerick	21	Cregan's Cross	€47,315	0	1	2	1	0	1
41	Limerick	7	Groody rbt	€27,798	0	0	11	0	1	4
42	Limerick	21	Barnagh Gardens	€39,069	2	0	1	1	1	2
43	Longford	63	Killashee Bridge	€13,557	0	1	0	0	0	0
44	Longford	4	Edgeworthstown ped crossing	€27,782	0	0	2	0	0	0
45	Longford	4	Ballynagoshen junction	€27,203	0	0	4	0	1	0
46	Mayo	59	Bellacorick at Jn NW of Bellacorick	€7,475	0	1	0	0	0	0
47	Mayo	59	Carrowmore	€6,179	0	1	2	0	0	0
48	Mayo	60	N60 at Brickers Crossroads and Cuilbeg Bridge	€5,102	0	1	0	0	0	0
49	Mayo	84	Bullaun	€14,513	1	1	1	0	0	0
50	Mayo	26	Foxford road	€24,974	0	0	1	0	0	1
51	Meath	4	Newcastle	€15,466	1	1	1	0	0	1
52	Meath	4	Rathfeigh	€18,960	0	0	4	0	1	2
53	Monaghan	54	At Junction of R186 & N54 in Monaghan Town	€12,049	0	0	1	0	0	1
54	Monaghan	12	Killyneil	€41,417	1	0	2	0	0	1
55	Offaly Co Co	52	Junction of Collins' Lane and N52, Arden	€10,207	2	1	0	0	0	5
56	Roscommon	6	Cloonark Junction	€7,388	0	0	1	0	2	2
57	Roscommon	6	Ballydangan - Moore & Lowtown jcn	€5,697	0	0	2	0	1	4
58	Roscommon	6	Beagh - Brabazon	€5,332	0	2	0	0	0	0
59	Roscommon	61	Carrigeens	€4,555	0	0	2	0	0	1
60	Roscommon	6	Cornafulla	€27,436	0	0	1	0	1	3
61	Sligo City	4	Junction markings at five locations	€9,261	0	3	18	1	1	7
62	Sligo City	4	Pease Rd Cemetry Road Junction	€18,777	0	0	0	0	0	0
63	Sligo City	16	Ashlane Duck St Roundabout	€32,428	0	0	0	0	0	0
64	Sligo	59	T junction of Local Rd L-2203 and Nat Sec Route N59	€27,783	0	0	1	0	0	1
65	Sth Dublin	81	N81 Oldbawn Rd Junction	€97,880	2	3	26	0	3	16
66	Tipperary Nth	7	Junctions Ballywilliam to Carrigatogher	€35,909	0	1	7	1	1	11
67	Tipperary Nth	7	Kilmastulla Bend (&Bashfield??)	€10,808	1	1	1	1	0	1
68	Tipperary SR	76	Junction of N76 and L2410-0 at South Lodge	€9,303	0	1	0	0	0	1
69	Tipperary SR	24	Apple Farm Junction (Land Purcahse)	€125,623	0	2	3	0	0	2
70	Westmeath	4	Crossanstown	€22,049	0	1	2	0	0	8
71	Wicklow	80	Hearns Cross Part 2	€58,563	1	3	8	0	0	1

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\*Assess only 2yr after data as bypass open 2006



2004 Scheme Assessed

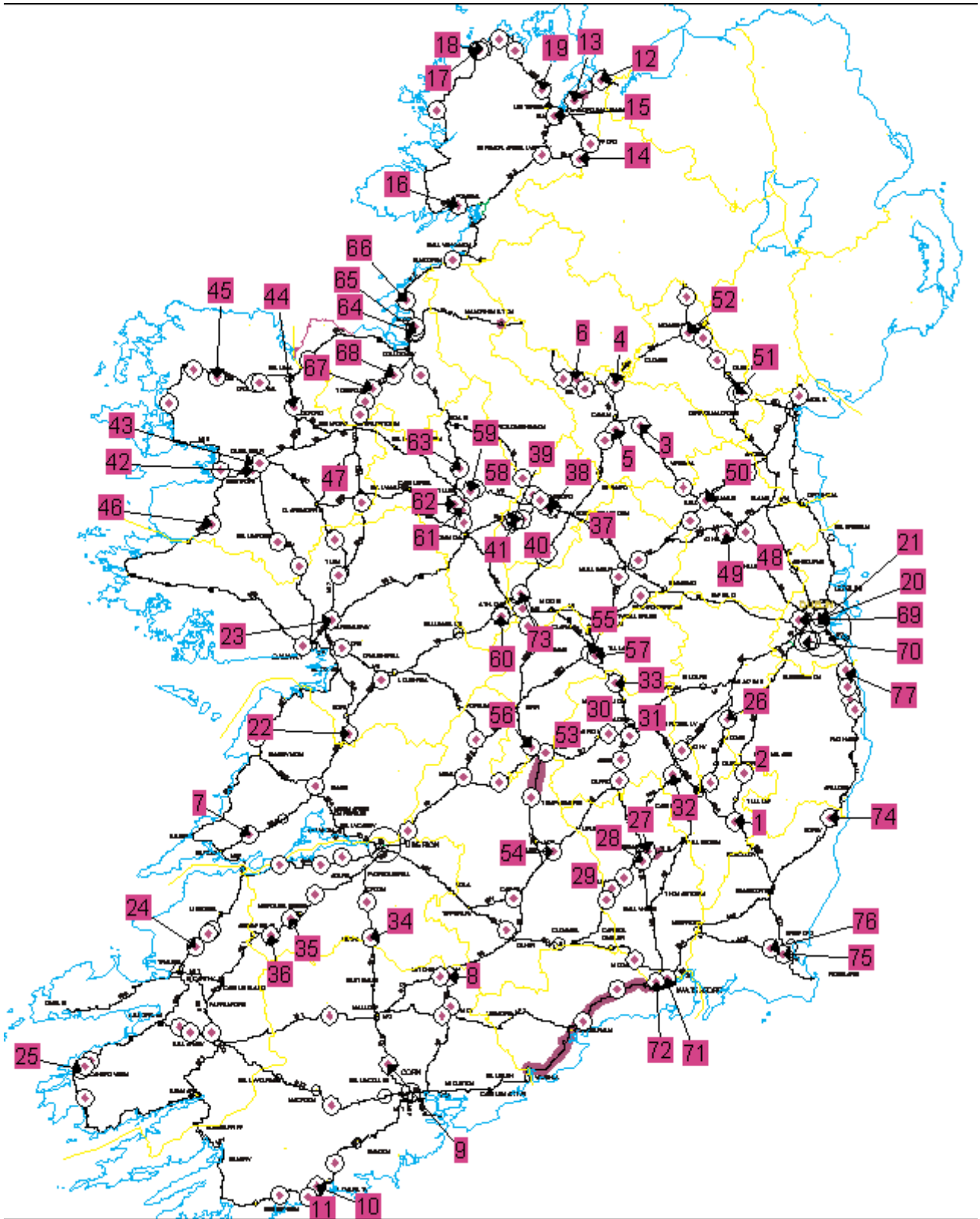
88 Schemes Assessed 2004			Total Cost in year of construction	€1,722,768	Before (5yr data)			After (4yr data)		
			Number of collisions per year		5	12	47	1	7	31
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
1	Carlow	9	Wells Cross South of Royal Oak Junction	€8,553	0	0	2	0	0	0
2	Cavan	3	Lisgrey	€15,427	0	2	1	0	0	1
3	Cavan	87	Bawnmore to Derrynagrieve	€10,000	0	0	4	0	0	1
4	Clare	67	Moyasta	€7,008	0	1	4	0	1	2
5	Cork S	25	Churchtown	€5,298	0	0	3	0	1	1
6	Cork W	71	Connonagh signs & barrier	€8,799	0	3	1	0	0	0
7	Cork W	71	Donemark Bridge, Bantry.	€5,798	0	1	0	0	1	2
8	Cork W	71	Bantry Town	€27,460	0	0	2	0	2	1
9	Donegal	3	Beeleek Road	€1,429	2	0	0	0	0	1
10	Donegal	15	Meencarragh	€15,000	0	1	3	0	0	0
11	Donegal	56	Straggedy - Derriscligh	€10,021	2	0	0	0	0	1
12	Dublin	1	Drumcondra - Clonliffe Road North Junction	€1,389	0	1	10	0	0	4
13	Dublin	1	Dorset St Junction - Granby row - St. Marys Place North Junction	€9,996	0	0	12	0	1	9
14	Galway	6	Meadow court jcn additional (Capped)	€2,080	0	1	1	0	0	1
15	Galway	17	Cloonacross	€3,867	0	1	1	0	0	1
16	Galway	18	Rocklands Junction	€4,503	0	3	8	0	0	1
17	Galway	65	Portumna	€3,607	0	1	2	0	1	0
18	Kerry	69	Bolton's Cross	€1,000	0	1	0	1	0	1
19	Kerry	69	Leitrim	€7,519	0	0	4	0	0	0
20	Kerry	72	Gortnahaneboy (Shrone Cross)	€16,897	0	1	0	0	1	0
21	Kerry	86	Tonavane (Small scale)	€6,709	1	0	0	0	0	2
22	Kildare	4	Leinster Bridge to Blackwater Bridge Junction	€20,000	5	7	12	0	2	15
23	Kilkenny	10	Floodhall to Whitecastle	€35,619	0	2	4	1	1	5
24	Kilkenny	24	Ballygriffin to Aglis	€38,147	1	0	4	0	0	0
25	Kilkenny	77	Georges Tree to Ardalloo	€65,450	2	2	4	0	0	2
26	Kilkenny	77	Baun to Dunmore	€2,584	0	0	1	1	0	1
27	Laois	78	Wandesford Bridge	€9,805	0	0	3	0	0	0
28	Laois	80	Coolanowle	€10,988	1	1	0	0	0	0
29	Laois	80	Nyra	€9,962	1	0	5	0	0	0
30	Laois	80	Clonreher	€4,187	0	1	1	0	1	0
31	Laois	80	Clonsoghey	€10,022	1	1	9	0	0	0
32	Limerick	7	Howley's Cross	€6,780	0	0	2	0	0	1
33	Limerick	21	Murphy's Cross, Adare	€30,000	1	0	3	0	0	3
34	Limerick	21	Croagh bypass	€40,843	1	1	9	0	0	4
35	Limerick	69	Cowpark	€4,001	0	0	1	1	0	0
36	Limerick	69	Wyeth Junction	€7,074	0	0	1	0	0	0
37	Longford	4	Garryandrew (1 material damage collision)	€17,801	1	0	3	0	1	2
38	Longford	4	Killsallagh	€25,574	0	1	5	0	1	1

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88 Schemes Assessed 2004			Total Cost in year of construction	€1,722,768	Before (5yr data)			After (4yr data)		
			Number of collisions per year		5	12	47	1	8	31
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
39	Longford	4	Ballagh ( 5 material damage collisions reported)	€5,571	0	0	2	0	0	1
40	Longford	55	Crossea ( 2 material damage collisions reported)	€20,241	0	1	2	0	0	0
41	Longford	55	Granard / Lisryan junction	€14,353	0	1	0	0	1	0
42	Longford	55	Castlepollard junction	€10,947	0	0	3	0	0	0
43	Louth	1	Aghnaskeagh Jnt	€1,729	0	0	1	0	0	0
44	Mayo	5	Gortnafolla junction	€15,203	0	1	2	0	0	0
45	Mayo	5	junction at Charlestown	€5,250	0	0	1	0	1	2
46	Mayo	5	Kilbree	€5,986	0	1	4	0	1	2
47	Mayo	26	Cloongullaun Bridge	€17,809	0	1	0	0	0	1
48	Mayo	59	N59 Crossmolina Road Ballina at Carrs Corner	€10,262	0	0	2	0	0	0
49	Mayo	59	N59 Junction with R335 at Westport	€2,982	0	0	2	0	1	0
50	Mayo	59	Mulranny Village	€26,078	0	1	1	0	0	0
51	Mayo	59	Dooleeg	€12,530	0	1	3	0	0	0
52	Mayo	59	Knockbreagan, Newport to Mulranny Road	€4,317	0	1	1	0	0	1
53	Mayo	60	Kilknock	€16,100	1	0	2	0	0	0
54	Mayo	60	Cullmore junction	€38,000	0	0	0	0	0	0
55	Meath	3	Bloomsbury	€18,881	1	0	4	0	0	0
56	Meath	4	Edenderry Road (R 401) Junction, Kinnegad	€28,349	0	1	2	0	0	2
57	Monaghan	2	Carrickmacross Main Street	€11,096	0	2	2	0	0	3
58	Monaghan	2	LCRM Castleblayney Pedestrian Crossing	€45,112	1	0	3	0	0	4
59	Monaghan	12	Tamlat Jnt	€4,707	0	0	1	0	0	1
60	Nth Tipperary	7	Lissanisky Cross	€18,129	0	0	1	0	0	1
61	Nth Tipperary	7	Shanbally Cross	€27,484	0	0	2	0	0	0
62	Nth Tipperary	8	Newhill Junction	€47,566	1	0	1	0	0	0
63	Nth Tipperary	62	Turtulla Cross	€30,970	0	0	1	0	0	1
64	Offaly	52	Pedestrian crossing outside Tullamore Hospital	€22,901	0	1	1	0	1	1
65	Offaly	52	N52, Durrow Crossroads	€4,004	0	0	1	0	0	1
66	Offaly	80	N80, Coolnahely Junction	€3,399	0	1	0	0	0	0
67	Offaly	80	N80, Kildangan Junction	€2,589	0	0	3	0	0	0
68	Offaly	80	N80, Ashfield Junction and Bends	€2,681	0	1	0	0	0	1
69	Roscommon	6	Crannagh - Summerhill	€61,792	0	2	2	0	0	1
70	Roscommon	63	Ranelagh	€7,279	0	1	2	0	0	1
71	Roscommon	63	Ballgalda or Trust	€10,601	0	0	5	1	0	2
72	Sligo City	15	Duck Street Junction (N16)	€103,683	0	0	5	0	1	6
73	Sligo	4	Drumfin X Rds ( L1401 and L5502)	€39,678	0	3	4	0	0	1
74	Sligo	15	Milltown X Rds ( L3404)	€25,168	0	0	1	0	0	0
75	Sligo	15	Gortarowry X Rds ( L7403 and L7308)	€40,825	1	1	2	0	0	2

88 Schemes Assessed 2004			Total Cost in year of construction	€1,722,768	Before (5 yr data)			After (4 yr data)		
			Number of collisions per year		5	12	47	1	8	31
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
76	Sligo	59	Culleens	€39,993	0	0	2	0	1	2
77	Sth Dublin	4	N4 at Kennelsfort Road Junction	€69,357	0	0	1	0	0	0
78	Sth Dublin	4	N4 at Newcastle / Adamstown	€80,257	0	0	10	0	2	9
78	Sth Dublin	81	N81 Embankment Road (Signing and Lining)	€48,758	0	3	12	0	3	9
80	Sth Tipperary	24	Kilshane	€45,602	0	0	1	0	1	2
81	Sth Tipperary	24	Condons Cross, Ballingarrane	€14,160	0	0	1	0	0	0
82	Sth Tipperary	24	Derrygrath (Part Funding)	€89,807	1	0	2	0	0	1
83	Waterford	25	The Sweep	€2,208	0	0	5	0	0	1
84	Waterford	72	Ballylemon	€4,298	0	0	3	0	0	2
85	Westmeath	6	Torque, west of Tyrrellspass	€11,652	0	1	1	0	0	0
86	Westmeath	6	Moate	€11,908	0	1	0	0	0	0
87	Westmeath	52	Kilynan	€9,610	0	0	1	0	0	0
88	Wexford	11	Tinnock N11	€19,709	0	1	0	0	0	0

\*2yr aft data only assessed as further scheme in 2007.



2005 Schemes Assessed

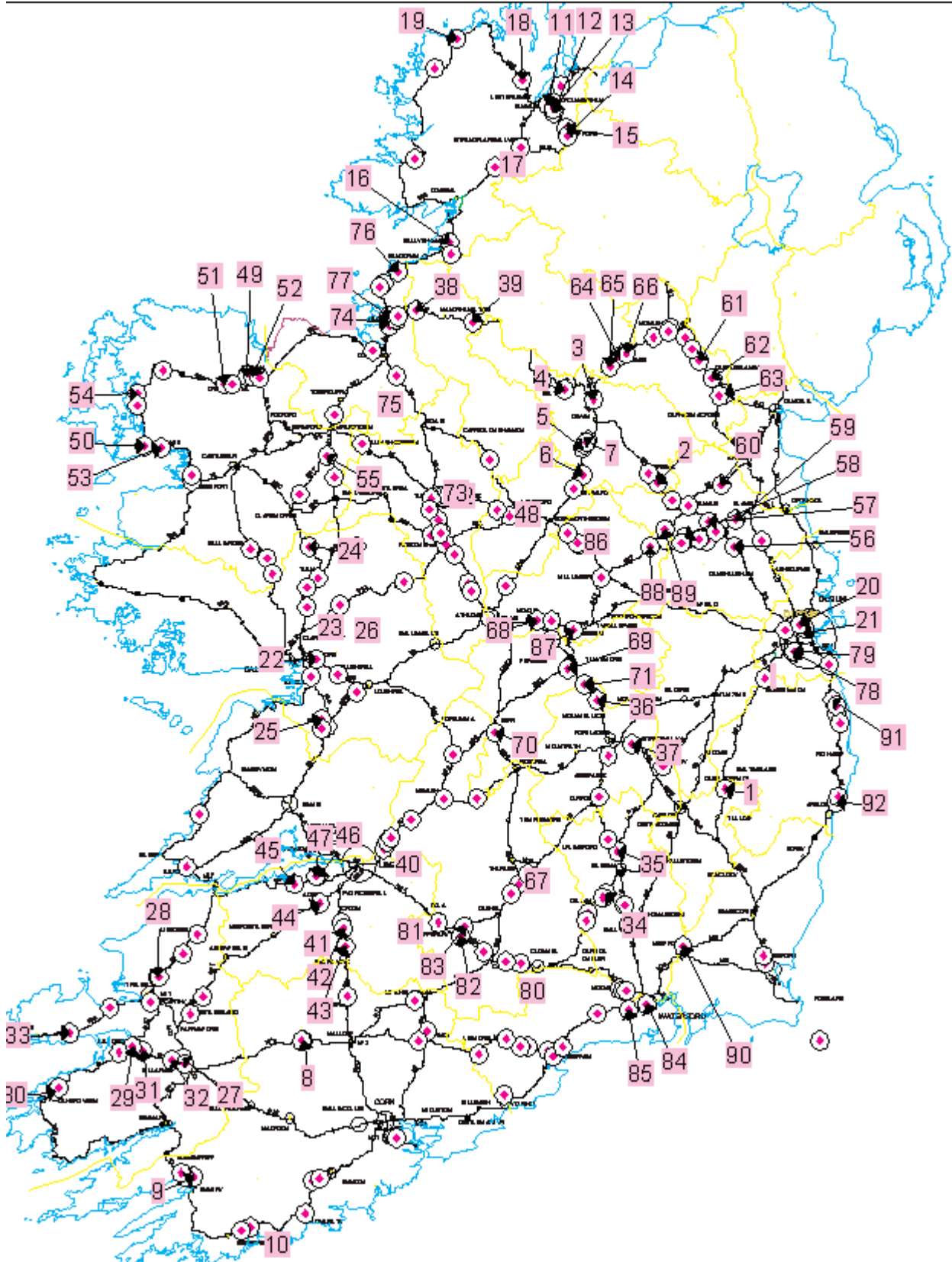
77 Schemes Assessed 2005			Total Cost in year of construction	€1,598,283	Before (5 yr data)			After (3 yr data)		
			Number of collisions per year		4	12	53	3	6	43
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
1	Carlow	81	Closh Cross Junction with the N80	€6,321	0	1	4	0	1	1
2	Carlow	81	Cuckoo Corner	€40,000	0	0	2	0	0	0
3	Cavan	3	N3 / R165-9/ R165-9 / L-3001. Knockanoark	€20,000	0	4	2	0	2	0
4	Cavan	54	N54 / L-1502 / R197 Gannon's "X" at Corrarod	€15,000	0	0	2	0	0	2
5	Cavan	55	N55 / L-65662 at Clarebane Bridge	€2,000	0	0	2	0	0	0
6	Cavan	87	N87 / L-1043 Jnt at Petrol Station at Ballyconnell Bridge	€15,000	0	0	1	0	0	1
7	Clare	68	N68/R486 Derycrossaun Cross Junction and Approach	€8,000	0	2	0	0	0	2
8	Cork N	8	Traffic Lights at Mitchelstown	€25,817	0	0	3	0	0	2
9	Cork S	20	Kilnamona N20,Junction to Grenagh	€19,413	0	2	2	0	0	1
10	Cork W	71	Curragh, East of Lissarda. Junction on bend.	€8,500	0	1	3	0	0	2
11	Cork W	71	Newmills E of Roscarbery. 1.2km series of bends.	€9,569	0	0	2	0	0	0
12	Donegal	13	N-13-20, Slab road junction Burt chapel	€8,000	0	0	2	0	1	0
13	Donegal	13	Newtown to Drumbarnet	€20,000	1	0	5	2	1	5
14	Donegal	15	N15-36 / 37, Cloughfin/Clady junction	€25,000	1	0	0	0	1	3
15	Donegal	56	Lurgybrack School	€83,459	1	0	0	0	0	3
16	Donegal	56	N-56-5, Drumbeagh	€4,994	1	0	1	0	0	1
17	Donegal	56	N-56-52, Smullen's corner, Falcarragh	€3,000	0	2	1	0	0	2
18	Donegal	56	N56-53/4 ray, Ballyboe, Falcarragh	€12,000	0	0	2	0	1	0
19	Donegal	56	N-56-74 / L-5872-1 Mullaheep junction	€6,341	0	0	1	0	0	1
20	Dublin	1	Dorset Street - Circular Road North	€24,106	0	0	10	0	1	4
21	Dublin	4	Merchants quay - Ushers Quay - Bridge St Lower	€6,834	0	0	6	0	2	5
22	Galway	18	Tulla Road R462 Junction	€22,898	0	0	1	1	0	0
23	Galway	63	Roanmore Cross	€18,644	0	0	3	0	0	0
24	Kerry	69	Rea	€14,251	0	1	0	0	0	0
25	Kerry	70	Knockaurrory junction, Cahersiveen	€220	0	1	0	0	0	0
26	Kildare	9	Ballymount Construction	€58,415	0	0	1	0	0	1
27	Kilkenny	10	Lyrath to Scart	€8,099	1	2	3	0	0	7
28	Kilkenny	10	Outrath	€10,000	0	0	2	0	0	3
29	Kilkenny	76	Kilbride to Ahanure	€18,000	0	1	3	0	0	0
30	Laois	7	Redcastle to Clonenagh	€40,000	1	1	2	0	0	0
31	Laois	8	Togher Roundabout	€20,000	0	1	2	0	0	2
32	Laois	78	The Rushes	€5,884	1	1	2	0	0	0
33	Laois	80	Laught Cross	€9,000	1	0	0	0	0	0



77 Schemes Assessed 2005			Total Cost in year of construction	€1,598,283	Before (5 yr data)			After (3 yr data)		
			Number of collisions per year		4	12	53	3	6	43
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
34	Limerick	20	Creggane	€10,000	0	0	2	0	1	0
35	Limerick	21	Garryduff Cross	€150,000	1	0	0	0	0	1
36	Limerick	21	Junction with R515	€7,500	0	0	1	0	0	1
37	Longford	4	East approach to Dublin roundabout	€69,004	0	0	2	0	0	0
38	Longford	4	Lissardowan	€14,000	0	0	1	0	0	1
39	Longford	63	Barnacor	€10,000	0	0	4	0	1	0
40	Longford	63	Kilashee West	€4,424	0	0	2	0	0	0
41	Longford	63	Rappareehill bends	€7,285	0	1	1	0	0	0
42	Mayo	5	Clonkeen	€6,000	0	0	2	0	0	0
43	Mayo	5	Knockaphunta	€15,000	0	0	3	0	0	2
44	Mayo	26	Coolcronan	€15,000	0	0	1	0	0	0
45	Mayo	59	Bellacorick PS	€15,000	0	0	1	0	0	0
46	Mayo	59	Erriff Bridge	€5,000	1	0	0	0	0	0
47	Mayo	83	Corraun to Grallagh	€8,896	0	1	1	0	0	0
48	Meath	3	Kilcarn - Cannistown	€30,000	0	0	7	0	0	2
49	Meath	51	Halltown junction at post N51-0150	€12,852	1	0	2	0	0	0
50	Meath	52	Maudlin Bridge	€16,066	0	2	2	0	0	3
51	Monaghan	2	Broomfield Junction	€5,518	0	0	1	0	0	3
52	Monaghan	2	Coolshannagh, Monaghan Town	€19,745	0	0	2	0	0	0
53	Nth Tipperary	7	Roscrea Golf club Racht Hall	€29,992	0	1	2	1	0	0
54	Nth Tipperary	8	Lackins Cross Littleton Thurles	€40,000	0	0	1	0	0	0
55	Offaly	52	Charleville Gate	€6,000	0	0	1	0	0	1
56	Offaly	62	Drumakeenan School	€50,000	0	1	0	0	0	1
57	Offaly	80	Clonminch to Derrybeg	€8,000	0	2	1	0	0	2
58	Roscommon	5	Cloonfree east	€30,000	0	1	1	0	0	0
59	Roscommon	5	Cloonfree west	€25,333	0	0	1	0	1	0
60	Roscommon	6	Creggan	€40,000	0	0	1	1	0	0
61	Roscommon	61	Four mile house	€40,000	1	0	3	0	0	0
62	Roscommon	61	Grange	€21,306	0	0	1	0	0	0
63	Roscommon	61	Shankill	€17,391	0	0	2	0	0	1
64	Sligo City	4	Pearse Rd, Kierans Rd. Junction	€25,000	0	0	2	0	0	2
65	Sligo City	4	Pearse Rd, Mail Coach Rd, Junction	€20,000	0	0	2	0	0	1
66	Sligo	15	Cashelgarran	€25,000	1	0	1	0	0	0
67	Sligo	17	Muckelty, Tubbercurry	€10,000	0	0	1	0	0	1
68	Sligo	17	Ropefied junction	€14,422	0	2	3	0	0	1
69	Sth Dublin	4	N4/M50 Roundabout	€20,000	1	1	21	0	1	12



82 Schemes Assessed 2005			Total Cost in year of construction	€1,598,283	Before (5 yr data)			After (3 yr data)		
			Number of collisions per year		4	12	53	3	6	43
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
70	Sth Dublin	81	N81 Belgard Road Junction	€21,701	0	0	12	0	1	5
71	Waterford City	25	Cork Road, at Land Registry Waterford	€18,307	0	0	12	0	0	4
72	Waterford	25	N25 Traffic Route Treatment	€38,000	7	23	70	3	3	30
73	Westmeath	55	Ballykeeran	€9,000	1	0	0	0	0	0
74	Wexford	11	Inch N11	€27,000	0	0	2	0	0	1
75	Wexford	25	Clonard	€6,000	0	0	2	0	0	0
76	Wexford	25	Larkins Cross	€30,000	0	2	4	1	0	3
77	Wicklow	11	Kilarny Rd Western Roundabout, Anti Skid Surface	€15,776	0	0	2	0	0	2

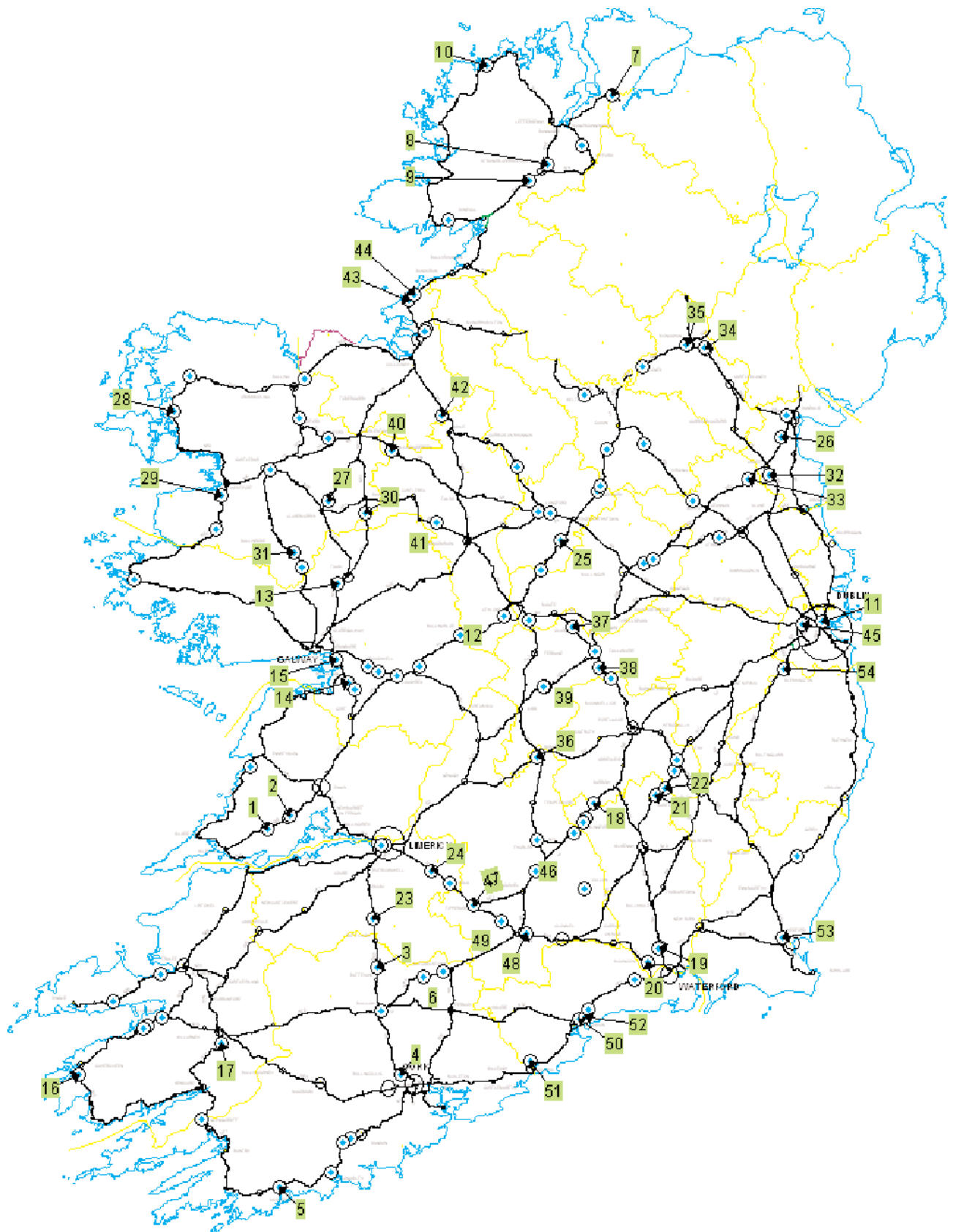


2006 Schemes Assessed

92 Schemes Assessed 2006			Total Cost in year of construction	€2,480,459	Before (5 yr data)			After (2 yr data)		
			Number of collisions per year		5	10	51	3	6	42
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
1	Carlow	81	Rathvilly Bridge - Footpath	€4,528	0	0	1	0	0	0
2	Cavan	3	Virginia south to Magera	€90,000	1	1	10	1	1	1
3	Cavan	54	N54 Kilnaglare	€16,288	0	1	3	0	0	0
4	Cavan	54	N87 / L-1054-0 at Ballyhugh	€18,504	0	0	2	0	0	0
5	Cavan	55	Lacken Cross	€30,000	0	1	2	0	0	0
6	Cavan	55	N55 / L2525 at Kilcogy	€1,029	0	0	1	0	0	0
7	Cavan	55	N55 / R154 Main Street	€32,841	0	1	0	0	0	0
8	Cork	72	Drumcummer, Millstreet.	€13,722	0	1	4	0	0	1
9	Cork	71	Dromkeal/Snave	€7,888	0	0	2	0	0	1
10	Cork	71	Myross Wood	€21,075	0	0	2	0	0	1
11	Donegal	14	Ballyboe X	€24,413	1	0	0	0	0	0
12	Donegal	14	Ballyholey Far	€17,405	3	0	4	0	0	2
13	Donegal	14	Doorable	€5,404	0	0	6	0	0	0
14	Donegal	14	Rossgier	€22,572	0	1	5	0	0	0
15	Donegal	14	X Roads, L-2414	€4,286	0	1	2	0	0	0
16	Donegal	15	Behy Hill, 4Km NE of Ballyshannon	€14,517	1	0	3	0	0	2
17	Donegal	15	Lough Mourne	€7,557	0	3	4	0	0	1
18	Donegal	56	Bluebanks	€16,532	0	1	2	0	0	0
19	Donegal	56	N56, 52/53, Falcarragh Town	€3,639	1	0	3	0	0	1
20	Dublin	2	Finglas Road - Ballyboggan Road Junction	€8,233	0	0	8	0	0	3
21	Dublin	4	Chruch Street Bridge (2 Junction)	€41,111	0	2	18	0	1	9
22	Galway	6	Derrydonnell Jcn	€10,738	1	0	4	0	0	0
23	Galway	17	Corofin	€28,898	0	0	3	0	0	0
24	Galway	17	Milltown Jcn	€5,501	0	0	1	0	0	0
25	Galway	18	Kiltartan	€2,078	0	1	4	0	2	0
26	Galway	63	Abbeyknockmoy	€16,190	0	0	1	0	0	0
27	Kerry	22	Coolgarriv junction	€110,399	0	2	2	0	0	0
28	Kerry	69	Leith East Cross	€15,541	0	0	1	0	0	2
29	Kerry	70	Bansha	€17,439	0	2	1	0	0	1
30	Kerry	70	Deelis Cahersiveen	€13,592	0	1	2	0	0	0
31	Kerry	72	Coolbane	€22,080	0	0	2	0	0	1
32	Kerry	72	Fossa, R563 junction	€33,641	0	0	1	0	0	0
33	Kerry	86	Aghnalack Bends	€22,456	0	0	1	0	0	0
34	Kilkenny	76	Ballymack	€25,000	0	1	4	0	0	1
35	Kilkenny	77	Junction with N78	€22,884	0	1	3	0	0	1

92 Schemes Assessed 2006			Total Cost in year of construction	€2,480,459	Before (5 yr data)			After (2 yr data)		
			Number of collisions per year		5	10	51	3	6	42
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
36	Laois	80	Clonaghadoo	€2,830	1	0	1	0	0	0
37	Laois	80	Park Grange	€8,663	1	1	2	0	0	0
38	Leitrim	16	Glencar-Waterfall jnt	€165,894	0	0	1	0	0	0
39	Leitrim	16	Sradrine, Lacoan and Sranagross	€51,347	1	1	1	0	0	0
40	Limerick	7	Junction with Bog Road north of Daly's Cross	€23,293	0	0	3	0	0	1
41	Limerick	20	Ballymacrory Cross	€7,329	0	0	1	0	0	1
42	Limerick	20	Banogue Village	€4,097	1	0	0	0	0	0
43	Limerick	20	Rockhill Cross	€9,305	0	0	1	0	0	3
44	Limerick	21	Coffey's Cross, Adare	€3,679	0	1	0	0	0	0
45	Limerick	69	Ballyengland Lower	€16,412	2	2	8	0	0	4
46	Limerick	69	Bolane	€8,842	0	0	1	0	0	2
47	Limerick	69	Hegarty's Cross	€63,550	1	1	1	0	0	1
48	Limerick	63	Athlone Rd Junction	€18,051	0	0	2	0	0	2
49	Mayo	59	Ardagh	€17,790	0	0	2	0	0	0
50	Mayo	59	Corraun Junction	€15,350	0	1	0	0	0	1
51	Mayo	59	Freeheens junction	€1,889	0	0	1	0	0	0
52	Mayo	59	L5149 jct Ballina	€26,791	0	0	1	0	0	1
53	Mayo	59	Newfield	€15,043	0	0	2	0	0	0
54	Mayo	59	Shrahamonragh	€27,419	0	0	0	0	0	1
55	Mayo	83	Ballyhaunis/Charlestown Rd. junction	€24,377	0	1	0	0	0	1
56	Meath	3	Dalغان Park Entrance	€96,033	0	1	1	0	0	2
57	Meath	3	Finnegans N3	€32,046	0	2	7	0	0	0
58	Meath	51	Ballyboy Junction with R164	€6,360	0	0	3	0	0	0
59	Meath	51	Wickers Cross	€32,762	0	0	1	0	0	0
60	Meath	52	Stokes Cross N52/L-1604	€16,496	0	0	2	0	0	0
61	Monaghan	2	Annyalla, minor road junction	€4,891	0	1	2	0	0	1
62	Monaghan	2	N53 Junction in Castleblaney	€46,181	0	0	2	0	0	0
63	Monaghan	53	Ballynacarry Bridge on County Boundary with Armagh	€17,537	0	0	1	0	0	0
64	Monaghan	54	Monaghan Road, Clones	€51,246	0	0	1	0	0	0
65	Monaghan	54	A3 Drumully to Clonoony SB	€39,336	0	0	1	0	0	0
66	Monaghan	54	Road Edges, Monaghan Road, Clones	€31,887	0	0	1	0	0	1
67	Nth Tipperary	8	Maxwells Cross (near H&J)	€18,099	1	0	2	0	0	0
68	Offaly	6	The Well, Moate	€17,623	0	2	2	0	0	0
69	Offaly	52	Fingerboard Junction, (Part 2)	€6,635	0	0	1	0	0	0
70	Offaly	62	Ballyeighan	€5,488	0	0	1	0	0	0
71	Offaly	80	Pigeon House, Killeigh	€4,969	0	0	1	0	0	0
72	Roscommon	5	Ardakillin	€45,130	0	0	5	0	0	1
73	Roscommon	5	Cloonanart Beg	€89,532	0	0	1	0	0	0

92 Schemes Assessed 2006			Total Cost in year of construction	€2,480,495	Before (5 yr data)			After (2 yr data)		
			Number of collisions per year		5	10	51	3	6	42
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
74	Sligo City	15	Scotsman's Walk Jct.	€20,000	0	0	1	0	0	0
75	Sligo	4	Cloonlurg	€40,021	1	0	2	0	0	0
76	Sligo	15	Cross Roads at Creevykeel	€20,090	0	0	1	0	0	0
77	Sligo	17	Junction at Rahabaena	€24,704	0	0	2	0	0	0
78	Sth Dublin	81	N81/M50 Roundabout	€48,413	1	0	0	0	0	1
79	Sth Dublin	81	Spawell Roundabout	€57,204	0	0	4	0	0	6
80	Sth Tipperary	24	Barne Pub Junction	€83,217	0	0	1	0	1	0
81	Sth Tipperary	24	Barronstown Cross, Limerick Junction	€11,032	0	1	2	0	0	0
82	Sth Tipperary	24	Kavanagh's Cross , Cloonfinglas, Bansha	€98,530	0	1	0	0	0	0
83	Sth Tipperary	74	Kilfeakle	€6,619	0	1	0	0	0	0
84	Waterford City	25	Cork Rd Kilbarry Rd, Waterford City	€22,662	0	0	2	0	0	1
85	Waterford	25	East of Tramore cross rds	€29,461	1	3	8	0	0	3
86	Westmeath	4	Larc junction	€1,225	0	0	1	0	0	0
87	Westmeath	6	Kilbeggan	€77,521	0	0	1	0	0	0
88	Westmeath	51	Delvin Village	€43,277	0	0	1	1	0	3
89	Westmeath	52	North of Clonmellon	€9,918	1	0	2	0	0	0
90	Wexford	30	Ferrybridge N30	€46,949	0	1	4	1	0	3
91	Wicklow	11	Glenview South Bound Left-off	€5,724	0	0	0	0	0	0
92	Wicklow	11	Observation Platforms and Traffic Management	€11,709	6	5	37	2	6	16



2007 Schemes Assessed

54 Schemes Assessed, 2007			Total Cost in year of construction	€1,758,384	Before (5Yr data)			After (1 yr data)		
			Number of collisions per year		2	3	20	2	2	12
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
1	Clare	68	Sullivan's Cross	€76,190	0	0	3	0	0	1
2	Clare	68	Boree Log	€3,071	1	0	0	0	0	0
3	Cork	20	Lisballyhea	€5,647	0	0	1	0	0	0
4	Cork	20	Blarney Slip Road	€16,575	0	0	1	0	0	0
5	Cork	71	Kilfadeen Junction to Union Hall	€182,551	0	0	0	0	0	0
6	Cork	73	Kildorrery Ped Crossing	€33,726	0	0	1	0	0	0
7	Donegal	13	Bridgeend	€11,028	0	0	3	0	0	0
8	Donegal	13	Tircallen	€42,060	1	0	5	0	0	0
9	Donegal	15	Blackburn Bridge	€2,231	2	1	5	0	0	0
10	Donegal	56	Carrowcannon	€137,266	0	0	0	0	0	0
11	Dublin	1	LCRM Schemes National Roads	€8,772	0	0	10	0	1	2
12	Galway	6	Ballinasloe Ped Crossing	€157,808	0	1	0	0	0	1
13	Galway	17	Claretuam Junction	€41,567	0	1	3	0	0	1
14	Galway	18	Kiltiernan National School	€34,071	0	1	0	0	0	0
15	Galway	18	Creganna Junction	€11,450	0	0	1	0	0	0
16	Kerry	70	Creamery Cross	€21,217	0	0	0	0	0	0
17	Kerry	71	Muckcross-Torc Signs	€19,634	0	1	2	0	0	0
18	Kilkenny	8	Colnacrutta junction	€3,500	0	0	1	0	0	0
19	Kilkenny	9	Rossinan Railway Level Crossing	€10,463	0	0	3	0	0	1
20	Kilkenny	24	Rathkieran Junction	€11,743	1	0	0	0	0	0
21	Kilkenny	78	Coolbawn Junction	€2,646	0	0	1	0	0	0
22	Laois	78	Crettyard	€4,500	0	1	0	0	0	0
23	Limerick	20	O'Rourke's Cross	€89,360	0	0	2	1	0	0
24	Limerick	24	Dromkeen Bend	€1,673	1	0	2	0	0	0
25	Longford	55	Carrickboy	€20,000	0	1	1	0	0	0
26	Louth	52	Walterstown Cross	€9,392	1	1	0	0	0	0
27	Mayo	17	Barnacarroll	€19,036	0	0	3	0	0	0
28	Mayo	59	Lettera Junction	€5,000	0	0	1	0	0	0
29	Mayo	59	Knappagh	€5,000	0	1	0	0	0	0
30	Mayo	83	Levallyroe	€8,898	0	0	2	0	0	0
31	Mayo	84	Loughanboy	€15,090	1	0	0	0	0	0
32	Meath	52	N52/R165 Junction	€12,413	0	0	1	0	0	0
33	Meath	52	Woodtown	€15,994	0	1	1	0	0	0
34	Monaghan	2	R214 Junction, Green Mile	€40,700	0	0	2	0	0	0
35	Monaghan	54	St. Davnett's	€25,566	0	0	1	0	0	1
36	Nth Tipperary	7	Junction at Pintown, Roscrea	€20,266	0	0	1	1	0	0
37	Offaly	80	Curragh Road junction	€966	0	0	1	0	0	0
38	Offaly	80	Scrub Cross	€1,931	0	1	0	0	0	0
39	Offaly	52	Carraghmore	€4,858	0	0	2	0	0	0
40	Roscommon	5	Kilkeeran to Bohalas	€69,430	1	0	2	0	0	0
41	Roscommon	60	Killinraghty Big	€59,200	0	1	0	0	0	0
42	Sligo	4	Ballinamad	€13,925	0	0	1	0	0	0

\*

54 Schemes Assessed, 2007			Total Cost in year of construction	€1,758,384	Before (5Yr data)			After (1 yr data)		
			Number of collisions per year		2	3	20	2	2	12
Sch No	LA	Rt	Scheme Description	Cost	F	S	M	F	S	M
43	Sligo	15	Grange ped crossing	€38,711	0	0	1	0	0	0
44	Sligo	15	Money Gold School	€6,048	1	0	2	0	0	0
45	Sth Dublin	81	N4 The Oval Junction	€44,170	1	0	8	0	0	2
46	Sth Tipperary	8	Ballytarsna Bends	€331	0	1	5	0	0	0
47	Sth Tipperary	24	Tipperary Town	€9,115	0	0	4	0	0	0
48	Sth Tipperary	24	Molls Cross	€54,000	0	1	4	0	0	0
49	Sth Tipperary	24	Tankerstown Cross	€374	0	0	1	0	1	1
50	Waterford	25	Tarrs Bridge N25/N72 Junction	€25,000	0	1	4	0	0	0
51	Waterford	25	Youghal Bridge	€7,000	0	0	1	0	0	0
52	Waterford	25	Kileen Deelish	€172,395	0	2	6	0	0	1
53	Wexford	11	Kitestown Cross Roads	€24,826	1	0	1	0	0	0
54	Wicklow	81	The Lamb Junction	€100,000	0	0	2	0	0	0

\* Assess 3 yr before data only as 2004 scheme



Appendix 2-Solution Type.																				
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year			
							F	S	M	F	S	M	F	S	M					
O	Junction	Carlow	9	Royal Oak Junction	€39,052	1	0.00	0.40	0.80	0.00	0.00	0.20	0.00	0.00	0.23	0.00	0.00	0.00	Side road adjustment such as regrade, buildout or realign	2002
O	Length	Cavan	3	Drumgora	€50,603	2	0.40	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Crash barrier plus other such as Signing & Lining	2002
O	Length	Cavan	3	Maghera - Virginia	€133,242	4	0.60	0.40	3.00	0.00	0.20	1.40	0.00	0.00	0.30	0.00	1.61	0.00	Lighting plus other such as rumbles, sight distance, pedestrian facilities or sign & line	2002
O	Length	Cavan	3	Tullymongan - Pollamore	€42,611	3	0.20	1.40	1.80	0.00	0.00	1.80	0.00	0.00	0.00	2.07	0.00	0.00	RTL or junction treatment along route	2002
O	Junction	Cork	8	Condonstown	€10,945	6	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RTL	2002
O		Cork	8	Mitchelstown, Galtee Meats assessed under 2001 programme	€34,199	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RTL & ped fac	2002
O	Junction	Cork	72	Forge Cross	€1,044	7	0.00	0.00	0.20	0.00	0.00	0.40	0.00	0.00	0.00	0.46	0.00	0.00	Signing&Lining	2002
O	Length	Cork	22	Coolnacaheragh	€6,903	8	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2002
O	Length	Cork	71	Bends at Rigsdale	€6,883	9	0.20	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2002
O	Length	Donegal	14	Drumbeg / Dromore	€26,693	10	0.40	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Lighting plus other such as rumbles, sight distance, pedestrian facilities or sign & line	2002

Appendix 2-Solution Type.																		
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year	
							F	S	M	F	S	M	F	S	M			
O	Length	Donegal	15	Keadew Bridge	€16,537	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2002	Surfacing & Signing&Lining
I	Length	Dublin	11	College Green - Grafton St	€27,206	12	0.00	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.92	2002	Antiskid
I	Junction	Dublin	3	Phibsborough Road / North Circular Road	€16,584	13	0.00	0.60	3.60	0.00	0.00	0.00	0.00	0.00	0.00	3.22	2002	Antiskid
I	Junction	Dublin	4	South Circular Road - Con Colbert Road / St. John	€21,038	14	0.00	0.40	5.40	0.00	0.00	0.00	0.20	0.00	0.30	2.53	2002	Antiskid
I	Junction	Dublin	11*4	Aston Quay - Westmoreland St	€28,531	15	0.00	0.40	3.40	0.00	0.00	0.00	0.20	0.00	0.30	1.15	2002	Antiskid
O	Junction	Fingal	2	Wards Cross	€3,065	16	0.20	0.20	0.80	0.20	0.20	0.20	0.20	0.23	0.30	0.46	2002	Side road adjustment such as regrade, buildout or realign
O	Junction	Galway	6	Coldwood	€15,147	17	0.00	0.60	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.23	2002	RTL plus other such as Side Road Realignment or sight distance
O	Junction	Galway	17	Cloonacauneen	€28,972	19	0.00	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.23	2002	RTL plus other such as Side Road Realignment or sight distance
O	Junction	Galway	84	Cloonboo	€11,078	20	0.20	0.20	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.23	2002	Sight Distance
O	Junction	Galway	18	Clarinbridge	€20,540	18	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.23	2002	Sight Distance & Other
O	Junction	Galway	17	Knockdoe	€21,183	26	0.20	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2002	Sight Distance & Other
O	Length	Galway	18	Lough Cultra	€35,305	21	0.20	0.40	1.20	0.20	0.00	0.00	0.00	0.23	0.00	0.46	2002	Signing&Lining

Appendix 2-Solution Type.																		
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year	
							F	S	M	F	S	M	F	S	M			
O	Junction	Kerry	69	Six Crosses	€27,523	23	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.00	0.23	Lighting plus other such as rumbles, sight distance, pedestrian facilities or sign & line	2002
O	Rail cross- infgr	Kerry	22	Minish Level Crossing	€4,870	22	0.00	0.00	0.80	0.00	0.00	0.40	0.00	0.00	0.46	Signing&Lining	2002	
O	Junction	Kildare	4	Callaghy's Garage, Royal Oak	€61,200	24	0.00	0.40	0.20	0.00	0.00	0.00	0.00	0.00	0.00	Junction Definition including buildouts & sign & Line	2002	
O	Junction	Kildare	9	Halverstown Junction (School)	€4,500	25	0.00	0.20	0.60	0.00	0.00	0.20	0.00	0.23	Signing&Lining	2002		
O	Length	Kilkenny	24	Mooncoin to Clonmore	€19,467	27	0.00	0.20	0.40	0.20	0.00	0.00	0.23	0.00	Signing&Lining	2002		
O	Length	Laois	80	Kylealeasha / Rosslighan / Crookedy	€5,843	28	0.20	0.80	0.80	0.00	0.40	1.20	0.00	1.38	Sight Distance & Other	2002		
O	Junction	Limerick	24	Killonan Cross	€11,200	29	0.00	0.00	0.40	0.00	0.00	0.40	0.00	0.46	Signing&Lining	2002		
I	Length	Longford	5	Main St. Longford	€12,765	30	0.00	0.20	0.20	0.40	0.20	0.20	0.46	0.23	Pedestrian Facilities	2002		
O	Bends	Longford	55	Cloghchurnel Part 2	€9,974	31	0.20	0.40	0.20	0.00	0.00	0.20	0.00	0.23	Signing&Lining	2002		
O	Length	Louth	1	Monasterboice to Killineer	€101,730	32	0.60	0.60	1.80	0.00	0.00	0.20	0.00	0.23	RTL or junction treatment along route	2002		
I	Length	Mayo	5	Ballyvary	€10,320	35	0.00	0.00	0.40	0.00	0.00	0.20	0.00	0.23	Lighting and Rumble strips	2002		
O	Length	Mayo	59	Cloontykillow junction	€8,225	34	0.00	0.00	0.40	0.00	0.00	0.20	0.00	0.23	Sight Distance & Other	2002		
O	Length	Mayo	17	Kiltimagh junction	€9,000	33	0.20	0.00	0.40	0.00	0.00	1.00	0.30	1.15	Signing&Lining	2002		

**Appendix 2-Solution Type.**

In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year	
							F	S	M	F	S	M	F	S	M			
I	Junction	Meath	3	Athlumney Junction	€46,599	36	0.20	0.00	0.20	0.00	0.00	0.60	0.00	0.00	0.00	0.69	Junction realignment	2002
O	Junction	Meath	3	Ross Cross (N3)	€203,003	38	0.00	0.00	0.80	0.20	0.00	1.20	0.23	0.00	1.38	RTL	2002	
O	Junction	Meath	3	Garlow cross	€115,286	39	0.00	0.00	0.20	0.20	0.00	0.40	0.23	0.00	0.46	RTL	2002	
O	Junction	Meath	4	Blackwater Bridge	€20,041	40	0.00	0.00	0.40	0.40	0.00	0.80	0.46	0.00	0.92	RTL	2002	
O	Junction	Meath	3	Whistlemount	€3,074	37	0.40	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.23	Signing&Lining	2002	
O	Narrow bridge	Meath	4	Leinster Bridge	€4,191	41	0.20	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.23	Signing&Lining	2002	
O	Junction	Meath	51	HallTown	€3,876	42	0.60	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2002	
O	Junction	Roscommon	6	Thomastown (Shannonbridge jcn)	€7,000	43	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	RTL	2002	
I	Junction	Sligo	15	Rathormack Wall and Footpath Part 2	€43,526	45	0.00	0.00	0.40	0.00	0.00	0.60	0.00	0.00	0.69	Pedestrian Facilities	2002	
I	Junction	Sligo	16	(N16) - (R286) Mollaway hill/ Ashlane - Hazelwood Rd (Sligo City)	€20,000	44	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.69	RTL	2002	
O	Bends	Sligo	15	Road section along bend at Urlar Td	€39,723	46	0.20	0.00	0.60	0.00	0.40	0.60	0.00	0.59	0.69	Crash barrier plus other such as Signing & Lining	2002	
O	Junction	Tipperary SR	8	Owens & Biggs Lot	€12,180	47	0.20	0.00	0.40	0.00	0.00	0.20	0.00	0.00	0.23	RTL	2002	
O	Junction	Waterford	25	Carrolls Cross	€71,434	50	0.00	0.00	0.40	0.00	0.00	0.60	0.00	0.00	0.69	RTL	2002	
O	Junction	Waterford	25	Pilltown Cross (R671 / L-2007)	€8,840	48	0.00	0.00	0.60	0.20	0.00	0.60	0.23	0.00	0.69	Signing&Lining	2002	
O	Length	Waterford	25	The Pike Hill	€4,223	49	0.00	0.00	1.20	0.00	0.80	0.60	0.00	1.18	0.69	Signing&Lining	2002	
O	Bends	Westmeath	52	Carrick	€47,008	51	0.20	0.00	0.60	0.00	0.00	0.20	0.00	0.00	0.23	Signing&Lining	2002	

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year		
							F	S	M	F	S	M	F	S	M				
O	Bends	Wexford	30	Coolinacon (Teagasc Research Station)	€2,846	52	0.00	0.20	0.40	0.00	0.00	0.60	0.00	0.00	0.69	0.00	0.00	0.69	2002
O	Junction	Wexford	80	Ballycarney - Junction with R745	€10,067	53	0.00	0.20	0.40	0.00	0.20	0.60	0.00	0.30	0.69	0.00	0.30	0.69	2002
O	Bends	Wicklow	81	Knockroe	€6,349	54	0.00	0.60	1.20	0.20	0.20	0.20	0.23	0.30	0.23	0.30	0.30	0.23	2002
O	Bends	Wicklow	81	Russborough Bends	€77,454	55	0.40	0.40	1.20	0.00	0.20	0.00	0.00	0.30	0.00	0.30	0.00	0.00	2002

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
O	Length	Carlow	81	Road Widening out-side Tullow	€18,532	2	0.20	0.40	0.60	0.20	0.20	0.20	0.24	0.29	0.22	Road Widening/Narrowing including removal or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2003
O	Junction	Carlow	80	Wallsforge Junction	€18,089	3	0.00	0.20	1.00	0.00	0.20	1.00	0.00	0.29	1.11	RTL	2003
O	Bend	Carlow	80	Graingenaspideogue	€11,838	1	0.00	0.00	0.20	0.00	0.00	0.40	0.00	0.00	0.44	Signing&Lining	2003
O	Length	Cavan	3	Road Widening from Maghera to Virginia (Part Funding)	€30,279	4	0.60	0.60	3.00	0.40	0.20	1.80	0.47	0.29	2.00	Pedestrian Facilities	2003
I	Length	Clare	18	Gort Road, Ennis	€7,110	5	0.00	0.00	0.60	0.00	0.40	0.40	0.00	0.58	0.44	Pedestrian Facilities	2003
I	Length	Clare	18	Crusheen	€53,823	6	0.20	0.00	0.00	0.00	0.20	1.40	0.00	0.29	1.55	Traffic Calming	2003
I	Length	Cork	72	Patrick St Fermoy (Pedestrian Crossing)	€9,213	8	0.00	0.00	0.20	0.00	0.00	0.60	0.00	0.00	0.67	Pedestrian Facilities	2003
O	Junction	Cork	8	Coracunna Cross	€94,517	9	0.20	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	RTL	2003
O	Bend	Cork	8	South of Corbett Cross	€7,781	7	0.20	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.67	Signing&Lining	2003
I	Length	Cork	25	Killeagh	€8,713	13	0.00	0.00	0.20	0.00	0.20	0.20	0.00	0.29	0.22	Pedestrian Facilities	2003
O	Bend	Cork	22	Coolavokig	€4,367	10	0.00	0.80	1.40	0.20	0.20	0.80	0.24	0.29	0.89	Signing&Lining	2003
O	Bend	Cork	71	Bend & junction at Cashelmore	€3,552	11	0.20	0.20	0.20	0.00	0.00	0.40	0.00	0.00	0.44	Signing&Lining	2003
O	Bend	Cork	22	Bend & junction at Carrigaphooca	€5,652	12	0.20	0.20	0.00	0.00	0.20	0.00	0.00	0.29	0.00	Signing&Lining	2003
O	Length	Cork	71	Church Cross, Skibbereen	€30,355	14	0.20	0.40	0.20	0.00	0.00	0.00	0.00	0.00	0.00	Lighting plus other such as rumbles, sight distance, pedestrian facilities or sign & line	2003

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year	
							F	S	M	F	S	M	F	S	M			
O	Length	Cork	71	Shannonvale Cross	€25,137	15	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Lighting plus other such as rumbles, sight distance, pedestrian facilities or sign & line	2003
I	Length	Donegal	15	Bundoran Main St (straight)	€29,050	19	0.00	0.80	1.00	0.00	0.00	0.40	0.00	0.00	0.00	0.44	Traffic Calming	2003
O	Junction	Donegal	13	Callan Junction	€26,110	18	0.00	0.20	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RTL	2003
O	Length	Donegal	15	Kiltown / Killygordon	€10,811	16	0.60	0.00	0.40	0.00	0.20	1.20	0.00	0.29	1.33	0.29	Signing&Lining	2003
O	Length	Donegal	15	Finner	€21,816	17	0.00	0.60	1.00	0.20	0.20	0.00	0.24	0.29	0.00	0.00	Signing&Lining	2003
I	Junction	Dublin	4	Ushers Quay - Ushers Island approaching Bridgefoot St Lwr	€10,160	20	0.40	0.00	1.20	0.00	0.20	0.20	0.00	0.29	0.22	0.00	Antiskid	2003
I	Junction	Dublin	1	Bachelors Walk - Eden Quay - O'Connell Bridge - O'Connell St	€16,163	21	0.00	0.60	1.20	0.00	0.00	2.00	0.00	0.00	2.22	0.00	Antiskid	2003
I	Junction	Fingal	2	Coolquay Junction	€13,564	22	0.00	0.00	0.20	0.00	0.00	0.40	0.00	0.00	0.44	0.00	Signing&Lining plus other such as Surfacing, rumbles, sight distance etc	2003
O	Junction	Galway	59	Maam Cross	€14,471	24	0.00	0.20	0.20	0.00	0.00	0.20	0.00	0.00	0.22	Sight Distance & Other	2003	
O	Junction	Galway	17	Caherlea Jn	€7,932	23	0.00	0.00	0.20	0.00	0.20	0.40	0.00	0.29	0.44	0.00	Signing&Lining	2003
O	Junction	Galway	18	Kiltiernan	€14,365	25	0.00	0.40	1.20	0.20	0.00	1.20	0.24	0.00	1.33	0.00	Signing&Lining	2003
I	Junction	Kerry	70	Skehanagh	€32,031	27	0.00	0.40	0.00	0.00	0.20	0.00	0.00	0.29	0.00	0.00	Signing&Lining	2003
I	Length	Kerry	72	Ballydowney to Fossa	€27,947	28	0.20	0.20	1.00	0.40	0.20	1.00	0.47	0.29	1.11	0.29	Signing&Lining	2003
O	Junction	Kerry	70	Brackhill, Castlemaine	€53,611	29	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
O	Length	Kilkenny	9	Deerpark	€7,635	30	0.00	0.20	0.80	0.00	0.00	0.80	0.00	0.00	0.89	Signing&Lining	2003
O	Length	Kilkenny	9	Castlebanny	€14,743	31	0.00	0.20	0.40	0.00	0.00	0.20	0.00	0.00	0.22	Signing&Lining	2003
O	Length	Kilkenny	9	Moanroe - Derrynahinch	€14,952	32	0.00	0.00	0.20	0.20	0.00	0.20	0.24	0.00	0.22	Signing&Lining	2003
O	Length	Kilkenny	9	Dunkitt to Grannagh	€17,973	33	0.20	0.40	0.40	0.00	0.00	0.60	0.00	0.00	0.67	Signing&Lining	2003
O	Junction	Kilkenny	9	Lukeswell/Knockmolyan	€165,066	26	0.00	0.60	1.60	0.00	0.20	0.00	0.00	0.29	0.00	Surfacing & Signing&Lining	2003
O	Length	Laois	80	Derrycloney	€5,032	34	0.00	0.20	1.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
O	Junction	Laois	80	N80 - N78 Simons Cross	€8,720	35	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
O	Bend	Laois	80	Glen Mor - Arles - Ballickmoyler	€14,759	36	0.20	0.40	0.40	0.00	0.00	1.60	0.00	0.00	1.78	Signing&Lining	2003
O	Length	Laois	8	Tonduff - Colt - Raheen - Bondra	€15,360	37	0.20	0.20	1.60	0.00	0.60	4.20	0.00	0.87	4.66	Signing&Lining	2003
O	Length	Leitrim	4	Killaniker Bridge N4	€24,585	38	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.29	0.00	Crash barrier plus other such as Signing & Lining	2003
I	Junction	Limerick	7	Groody rbt	€27,144	41	0.00	0.00	2.20	0.00	0.20	0.80	0.00	0.29	0.89	Signing & Lining	2003
I	Junction	Limerick	69	Boland's Cross	€4,728	39	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.22	Signing&Lining	2003
O	Junction	Limerick	21	Cregan's Cross	€46,202	40	0.00	0.20	0.40	0.20	0.00	0.20	0.24	0.00	0.22	RTL	2003
O	Junction	Limerick	21	Barnagh Gardens	€38,150	42	0.40	0.00	0.20	0.20	0.20	0.40	0.24	0.29	0.44	RTL	2003
I	Length	Longford	4	Edgeworthstown ped crossing	€27,128	44	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	Pedestrian Facilities	2003
O	Junction	Longford	4	Ballynagoshen junction	€26,563	45	0.00	0.00	0.80	0.00	0.20	0.00	0.00	0.29	0.00	RTL	2003
O	Length	Longford	63	Killashee	€13,238	43	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
I	Junction	Mayo	84	Bullaun	€14,172	49	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003



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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
I	Length	Mayo	26	Foxford road	€24,387	50	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.22	Signing&Lining	2003
O	Junction	Mayo	59	Bellacorick at Jn NW of Bellacorick	€7,299	46	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
O	Length	Mayo	59	Carrowmore	€6,034	47	0.00	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
O	Length	Mayo	60	N60 at Brickens Crossroads and Cullbeg Bridge	€4,982	48	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
O	Junction	Meath	4	Newcastle	€15,102	51	0.20	0.20	0.20	0.00	0.00	0.20	0.00	0.00	0.22	RTL	2003
O	Junction	Meath	4	Rathfeigh	€18,514	52	0.00	0.00	0.80	0.00	0.20	0.40	0.00	0.29	0.44	RTL	2003
I	Junction	Monaghan	54	At Junction of R186 & N54 in Monaghan Town	€11,766	53	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.22	Antiskid	2003
O	Length	Monaghan	12	Killyneil	€40,443	54	0.20	0.00	0.40	0.00	0.00	0.20	0.00	0.00	0.22	Traffic Calming	2003
I	Junction	Offaly	52	Junction of Collins' Lane and N52, Arden	€9,967	55	0.40	0.20	0.00	0.00	0.00	1.00	0.00	0.00	1.11	Pedestrian Facilities	2003
O	Junction	Roscommon	6	Cornafulla	€26,791	60	0.00	0.00	0.20	0.00	0.20	0.60	0.00	0.29	0.67	RTL	2003
O	Junction	Roscommon	6	Cloonark Junction	€7,214	56	0.00	0.00	0.20	0.00	0.40	0.40	0.00	0.58	0.44	Signing&Lining	2003
O	Junction	Roscommon	6	Ballydangan - Moore & Lowtown jcn	€5,563	57	0.00	0.00	0.40	0.00	0.20	0.80	0.00	0.29	0.89	Signing&Lining	2003
O	Length	Roscommon	6	Beagh - Brabazon	€5,207	58	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
O	Junction	Roscommon	61	Carrigeens	€4,448	59	0.00	0.00	0.40	0.00	0.00	0.20	0.00	0.00	0.22	Signing&Lining	2003
I	Junction	Sligo City	16	Ashlane Duck St Roundabout	€31,665	63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Antiskid	2003
I	Length	Sligo City	4	Junction markings at five locations	€9,043	61	0.00	0.60	3.60	0.40	1.00	7.60	0.47	1.45	8.44	Signing&Lining	2003
I	Junction	Sligo City	4	Pease Rd Cemetry Road Junction	€18,335	62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing&Lining	2003
I	Junction	Sligo	59	T junction of Local Rd L-2203 and Nat Sec Route N59	€27,129	64	0.00	0.00	0.20	0.00	0.00	0.20	0.00	0.00	0.22	Sight Distance	2003

Appendix 2-Solution Type.																	
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
I	Junction	Sth Dublin	81	N81 Oldbawn Rd Junction	€95,577	65	0.40	0.60	5.20	0.00	0.60	3.20	0.00	0.87	3.55	Antiskid	2003
O	Length	Tipperary Nth	7	Junctions Ballywilliam to Carrigatogher	€35,064	66	0.00	0.20	1.40	0.20	0.20	2.20	0.24	0.29	2.44	Signing&Lining	2003
O	Bend	Tipperary Nth	7	Kilmastulla Bend (&Bashfield??)	€10,554	67	0.20	0.20	0.20	0.20	0.00	0.20	0.24	0.00	0.22	Signing&Lining	2003
O	Junction	Tipperary SR	76	Junction of N76 and L2410-0 at South Lodge	€9,084	68	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.22	Surfacing & Signing&Lining	2003
O	Length	Tipperary SR	24	Apple Farm Junction (Land Purchase)	€122,668	69	0.00	0.40	0.60	0.00	0.00	0.40	0.00	0.00	0.44	Surfacing & Signing&Lining	2003
O	Junction	Westmeath	4	Crossanstown	€21,530	70	0.00	0.20	0.40	0.00	0.00	1.60	0.00	0.00	1.78	RTL	2003
O	Junction	Wicklow	80	Hearns Cross Part 2	€57,185	71	0.20	0.60	1.60	0.00	0.00	0.20	0.00	0.00	0.22	Sight Distance & Other	2003

Appendix 2-Solution Type.																		
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year	
							F	S	M	F	S	M	F	S	M			
O	Junction	Carlow	9	Wells Cross South of Royal Oak Junction	€9,370	1	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Cavan	3	Lisgrey	€16,900	2	0.00	0.40	0.20	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.26	2004
O	Length	Cavan	87	Bawnmore to Derrynagrieve	€10,955	3	0.00	0.00	0.80	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.26	2004
O	Length	Clare	67	Moyasta	€7,677	4	0.00	0.20	0.80	0.00	0.00	0.25	0.50	0.00	0.00	0.35	0.53	2004
O	Length	Cork	8	Gortnahown	€17,564	5	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.35	0.00	0.00	2004
O	Junction	Cork	25	Churchtown	€5,804	6	0.00	0.00	0.60	0.00	0.00	0.25	0.25	0.00	0.35	0.26	0.26	2004
I	Length	Cork	71	Bantry Town	€30,082	9	0.00	0.00	0.40	0.00	0.00	0.50	0.25	0.00	0.70	0.26	0.26	2004
O	Bend	Cork	71	Connonagh signs & bar- rier	€9,639	7	0.00	0.60	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Bend	Cork	71	Donemark Bridge, Bantry.	€6,352	8	0.00	0.20	0.00	0.00	0.00	0.25	0.50	0.00	0.35	0.53	0.53	2004
O	Bend	Donegal	15	Meencarragh	€16,433	11	0.00	0.20	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Length	Donegal	3	Beeleek Road	€1,565	10	0.40	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.26	0.26	2004
O	B	Donegal	56	Straggedy - Derrisligh	€10,978	12	0.40	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.26	0.26	2004
I	Junction	Dublin	1	Dorset St Junction - Granby row - St. Marys Place North Junction	€10,951	14	0.00	0.00	2.40	0.00	0.25	2.25	0.00	0.35	2.36	0.00	0.00	2004
I	Junction	Dublin	1	Drumcondra - Clonliffe Road North Junction	€1,522	13	0.00	0.20	2.00	0.00	0.00	1.00	0.00	0.00	1.05	0.00	0.00	2004
I	Length	Galway	65	Portumna	€3,951	18	0.00	0.20	0.40	0.00	0.25	0.00	0.00	0.35	0.00	0.00	0.00	2004

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Short Solution Description	Year			
							F	S	M	F	S	M					
O	Junction	Galway	18	Rocklands Junction	€4,933	17	0.00	0.60	1.60	0.00	0.00	0.25	0.00	0.00	0.26	Road Widening/Narrowing including removal or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2004
O	Junction	Galway	6	Meadow court junction additional (Capped)	€2,279	15	0.00	0.20	0.20	0.00	0.00	0.25	0.00	0.00	0.26	Sight Distance & Other	2004
O	Junction	Galway	17	Cloonacross	€4,236	16	0.00	0.20	0.20	0.00	0.00	0.25	0.00	0.00	0.26	Signing & Lining	2004
O	Junction	Kerry	69	Bolton's Cross	€1,096	19	0.00	0.20	0.00	0.25	0.00	0.25	0.29	0.00	0.26	Signing & Lining	2004
O	Junction	Kerry	69	Leitrim	€8,237	20	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Kerry	72	Gortnahaneboy (Shrone Cross)	€18,511	21	0.00	0.20	0.00	0.00	0.25	0.00	0.00	0.35	0.00	Signing & Lining	2004
O	Junction	Kerry	86	Tonavane (Small scale)	€7,350	22	0.20	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.53	Signing & Lining	2004
O	Length	Kildare	4	Leinster Bridge to Blackwater Bridge Junction	€21,910	23	1.00	1.40	2.40	0.00	0.50	3.75	0.00	0.70	3.94	Speed Camera & Signing & Lining	2004
O	Length	Kilkenny	24	Ballygriffin to Aglish	€41,790	25	0.20	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	Sight Distance & Other	2004
O	Length	Kilkenny	77	Georges Tree to Ardalo	€71,700	26	0.40	0.40	0.80	0.40	0.00	0.50	0.00	0.00	0.53	Sight Distance & Other	2004
O	Length	Kilkenny	10	Floodhall to Whitecastle	€39,021	24	0.00	0.40	0.80	0.25	0.25	1.25	0.29	0.35	1.31	Signing & Lining	2004
O	Length	Kilkenny	77	Baun to Dunmore	€2,831	27	0.00	0.00	0.20	0.25	0.00	0.25	0.29	0.00	0.26	Signing & Lining	2004
O	B	Laois	78	Wandesford Bridge	€10,741	28	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	B	Laois	80	Coolanowle	€12,037	29	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Laois	80	Nyra	€10,913	30	0.20	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004

## Appendix 2-Solution Type.

In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year			
							F	S	M	F	S	M	F	S	M					
O	Junction	Galway	18	Rocklands Junction	€4,933	17	0.00	0.60	1.60	0.00	0.00	0.25	0.00	0.00	0.26	0.00	0.00	0.26	Road Widening/Narrowing or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2004
O	Junction	Galway	6	Meadow court junction additional (Capped)	€2,279	15	0.00	0.20	0.20	0.00	0.00	0.25	0.00	0.00	0.26	0.00	0.00	0.26	Sight Distance & Other	2004
O	Junction	Galway	17	Cloonacross	€4,236	16	0.00	0.20	0.20	0.00	0.00	0.25	0.00	0.00	0.26	0.00	0.00	0.26	Signing & Lining	2004
O	Junction	Kerry	69	Bolton's Cross	€1,096	19	0.00	0.20	0.00	0.25	0.00	0.25	0.00	0.29	0.00	0.00	0.26	Signing & Lining	2004	
O	Junction	Kerry	69	Leitrim	€8,237	20	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Kerry	72	Gortnahaneboy (Shrone Cross)	€18,511	21	0.00	0.20	0.00	0.00	0.25	0.00	0.00	0.00	0.35	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Kerry	86	Tonavane (Small scale)	€7,350	22	0.20	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.53	0.00	Signing & Lining	2004
O	Length	Kildare	4	Leinster Bridge to Blackwater Bridge Junction	€21,910	23	1.00	1.40	2.40	0.00	0.50	3.75	0.00	0.00	0.70	3.94	0.00	0.00	Speed Camera & Signing & Lining	2004
O	Length	Kilkenny	24	Ballygriffin to Aglish	€41,790	25	0.20	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Sight Distance & Other	2004
O	Length	Kilkenny	77	Georges Tree to Ardaboo	€71,700	26	0.40	0.40	0.80	0.00	0.00	0.50	0.00	0.00	0.00	0.53	0.00	0.00	Sight Distance & Other	2004
O	Length	Kilkenny	10	Floodhall to Whitecastle	€39,021	24	0.00	0.40	0.80	0.25	0.25	1.25	0.29	0.35	1.31	0.00	0.00	0.00	Signing & Lining	2004
O	Length	Kilkenny	77	Baun to Dunmore	€2,831	27	0.00	0.00	0.20	0.25	0.00	0.25	0.00	0.29	0.00	0.26	0.00	0.00	Signing & Lining	2004
O	B	Laois	78	Wandesford Bridge	€10,741	28	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	B	Laois	80	Coolanowle	€12,037	29	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Laois	80	Nyra	€10,913	30	0.20	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004

Appendix 2-Solution Type.																	
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
O	Junction	Laois	80	Clonreher	€4,587	31	0.00	0.20	0.20	0.00	0.25	0.00	0.00	0.35	0.00	0.00	2004
O	Length	Laois	80	Clonsoghey	€10,979	32	0.20	0.20	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Limerick	21	Croagh bypass	€44,744	35	0.20	0.20	1.80	0.00	0.00	0.00	0.00	0.00	0.00	1.05	2004
O	Junction	Limerick	7	Howley's Cross	€7,427	33	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.26	2004
O	Junction	Limerick	69	Cowpark	€4,383	36	0.00	0.00	0.20	0.25	0.00	0.00	0.29	0.00	0.00	0.00	2004
O	Junction	Limerick	69	Wyeth Junction	€7,750	37	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Limerick	21	Murphy's Cross, Adare	€32,865	34	0.20	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.79	2004
I	Junction	Longford	55	Granard / Lisryan junction	€15,724	42	0.00	0.20	0.00	0.00	0.25	0.00	0.00	0.00	0.35	0.00	2004
I	Junction	Longford	55	Castlepollard junction	€11,992	43	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Longford	4	Garryandrew (1 material damage accident)	€19,501	38	0.20	0.00	0.60	0.00	0.25	0.50	0.00	0.35	0.53	0.00	2004
O	Length	Longford	4	Killsallagh	€28,016	39	0.00	0.20	1.00	0.00	0.25	0.25	0.00	0.35	0.26	0.00	2004
O	Junction	Longford	4	Ballagh ( 5 material damage accidents reported)	€6,103	40	0.00	0.00	0.40	0.00	0.00	0.25	0.00	0.00	0.00	0.26	2004
O	Junction	Longford	55	Crossea ( 2 material damage accidents reported)	€22,174	41	0.00	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Louth	1	Aghnaskeagh Jnt	€1,894	44	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
I	Junction	Mayo	5	junction at Charlestown	€5,751	46	0.00	0.00	0.20	0.00	0.25	0.50	0.00	0.35	0.53	0.00	2004
I	Junction	Mayo	59	N59 Crossmolina Road Ballina at Carrs Corner	€11,242	50	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
I	Junction	Mayo	59	N59 Junction with R335 at Westport	€3,267	51	0.00	0.00	0.40	0.00	0.25	0.00	0.00	0.35	0.00	0.00	2004

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
O	Junction	Mayo	5	Gortnafolla junction	€16,655	45	0.00	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Mayo	60	Cullmore junction	€41,629	56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Mayo	59	Mulranny Village	€28,568	52	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Mayo	5	Kilbree	€6,558	47	0.00	0.20	0.80	0.00	0.25	0.00	0.00	0.35	0.53	0.00	2004
O	Length	Mayo	17	Lurga	€5,749	48	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.70	0.00	0.00	2004
O	Length	Mayo	59	Knockbreagan, Newport to Muiranny Road	€4,729	54	0.00	0.20	0.20	0.00	0.00	0.25	0.00	0.00	0.26	0.00	2004
O	Length	Mayo	26	Cloongullaun Bridge	€19,510	49	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	2004
O	Length	Mayo	60	Kilknock	€17,638	55	0.20	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Length	Mayo	59	Dooleeg	€13,727	53	0.00	0.20	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
I	Junction	Meath	4	Edenderry Road (R 401) Junction, Kinnegad	€31,056	58	0.00	0.20	0.40	0.00	0.00	0.00	0.00	0.50	0.00	0.53	2004
O	Junction	Meath	3	Bloomsbury	€20,684	57	0.20	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
I	Length	Monaghan	2	Carrickmacross Main Street	€12,156	59	0.00	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.79	0.00	2004
I	Length	Monaghan	2	LCRM Castleblayney Pedestrian Crossing	€49,420	60	0.20	0.00	0.60	0.00	0.00	0.00	0.00	0.00	1.05	0.00	2004
O	Junction	Monaghan	12	Tamlat Jnt	€5,157	61	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.26	0.00	2004
O	Junction	Nth Tipperary	7	Lissanisky Cross	€19,860	62	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.26	0.00	2004
O	Junction	Nth Tipperary	7	Shanbally Cross	€30,109	63	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Nth Tipperary	8	Newhill Junction	€52,109	64	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
O	Junction	Nth Tipperary	62	Turtulla Cross	€33,928	65	0.00	0.00	0.20	0.00	0.00	0.25	0.00	0.00	0.26	Sight Distance & Other	2004
I	Length	Offaly	52	Pedestrian crossing out-side Tullamore Hospital	€25,088	66	0.00	0.20	0.20	0.00	0.25	0.25	0.00	0.35	0.26	Pedestrian Facilities	2004
O	Junction	Offaly	52	N52, Durrow Crossroads	€4,386	67	0.00	0.00	0.20	0.00	0.00	0.25	0.00	0.00	0.26	Signing & Lining	2004
O	Junction	Offaly	80	N80, Coolnahely Junction	€3,724	68	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Offaly	80	N80, Kildangan Junction	€2,836	69	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2004
O	Junction	Offaly	80	N80, Ashfield Junction and Bends	€2,937	70	0.00	0.20	0.00	0.00	0.00	0.25	0.00	0.00	0.26	Signing & Lining	2004
O	Length	Roscommon	6	Crannagh - Summerhill	€67,693	72	0.00	0.40	0.40	0.00	0.00	0.25	0.00	0.00	0.26	Lighting plus other such as rumbles, sight distance, pedestrian facilities or sign & line	2004
O	Junction	Roscommon	5	Gortnagoyne (Elphin junction)	€62,109	71	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.26	RTL	2004
O	Junction	Roscommon	63	Ranelagh	€7,974	73	0.00	0.20	0.40	0.00	0.00	0.25	0.00	0.00	0.26	Signing & Lining	2004
O	Length	Roscommon	63	Ballgalda or Trust	€11,613	74	0.00	0.00	1.00	0.25	0.00	0.50	0.29	0.00	0.53	Signing & Lining	2004
O	Junction	Sligo	15	Milltown X Rds ( L3404)	€27,572	77	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	RTL	2004
O	Junction	Sligo	15	Gortarowry X Rds ( L7403 and L7308)	€44,724	78	0.20	0.20	0.40	0.00	0.00	0.50	0.00	0.00	0.53	RTL	2004
O	Junction	Sligo	4	Drumfin X Rds ( L1401 and L5502)	€43,467	76	0.00	0.60	0.80	0.00	0.00	0.25	0.00	0.00	0.26	Sight Distance & Other	2004
O	Length	Sligo	59	Culleens	€43,812	79	0.00	0.00	0.40	0.00	0.25	0.50	0.00	0.35	0.53	Sight Distance & Other	2004
O	Junction	Sligo City	15	Duck Street Junction (N16)	€113,585	75	0.00	0.00	1.00	0.00	0.25	1.50	0.00	0.35	1.58	Road Widening/Narrowing including removal or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2004



Appendix 2-Solution Type.																	
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
I	Junction	Sth Dublin	4	N4 at Kennelsfort Road Junction	€75,981	80	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
I	Junction	Sth Dublin	4	N4 at Newcastle / Adamstown	€87,922	81	0.00	0.00	2.00	0.00	0.50	2.25	0.00	0.70	2.36	0.00	2004
O	Length	Sth Dublin	81	N81 Embankment Road (Signing and Lining)	€53,414	82	0.00	0.60	2.40	0.00	0.75	2.25	0.00	1.04	2.36	0.00	2004
O	Junction	Sth Tipperary	24	Kilshane	€49,957	83	0.00	0.00	0.20	0.00	0.25	0.50	0.00	0.35	0.53	0.00	2004
O	Junction	Sth Tipperary	24	Condons Cross, Ballingarrane	€15,512	84	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Sth Tipperary	24	Derrygrath (Part Funding)	€98,384	85	0.20	0.00	0.40	0.00	0.00	0.25	0.00	0.00	0.26	0.00	2004
O	Length	Waterford	25	The Sweep	€2,419	86	0.00	0.00	1.00	0.00	0.00	0.25	0.00	0.00	0.26	0.00	2004
O	Length	Waterford	72	Ballylemon	€4,708	87	0.00	0.00	0.60	0.00	0.00	0.50	0.00	0.00	0.53	0.00	2004
I	Length	Westmeath	6	Moate	€13,045	89	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Westmeath	6	Torque, west of Tyrrellspass	€12,765	88	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Length	Westmeath	52	Kilynan	€10,528	90	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004
O	Junction	Wexford	11	Tinnock N11	€21,591	91	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2004

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year			
							F	S	M	F	S	M	F	S	M					
O	Junction	Carlow	81	RSRM Closh Cross Junction with the N80	€7,603	1	0.00	0.20	0.80	0.00	0.33	0.33	0.00	0.45	0.35	0.00	0.00	0.00	Side road adjustment such as regrade, buildout or realign	2005
O	Junction	Carlow	81	RSRM Cuckoo Corner	€48,111	2	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Side road adjustment such as regrade, buildout or realign	2005
I	Garrage	Cavan	87	RSRM N87 / L-1043 Jnt at Petrol Station at Ballyconnell Bridge	€18,042	6	0.00	0.00	0.20	0.00	0.33	0.00	0.00	0.00	0.00	0.35	0.00	0.00	Junction realignment	2005
O	Junction	Cavan	54	RSRM N54 / L-1502 / R197 Gannon's "X" at Corratrod	€18,042	4	0.00	0.00	0.40	0.00	0.67	0.00	0.00	0.00	0.00	0.70	0.00	0.00	Antiskid plus other such as Signing & Lining, ladder bar	2005
O	Junction	Cavan	3	RSRM N3 / R165-9/ R165-9 / L-3001. Knockanoark	€24,056	3	0.00	0.80	0.40	0.00	0.67	0.00	0.00	0.00	0.90	0.00	0.00	0.00	RTL	2005
O	Narrow bridge	Cavan	55	RSRM N55 / L-65662 at Clarebane Bridge	€2,406	5	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Clare	68	RSRM N68/R486 Derycrossaun Cross Junction and Approach	€9,622	7	0.00	0.40	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.70	0.00	0.00	Sight Distance & Other	2005
I	Junction	Cork	8	RSRM Traffic Lights at Mitchelstown	€31,052	8	0.00	0.00	0.60	0.00	0.67	0.00	0.00	0.00	0.00	0.70	0.00	0.00	Traffic Lights with pedestrian phase	2005
O	Junction	Cork	20	RSRM Kinamona N20,Junction to Grenagh	€23,349	9	0.00	0.40	0.40	0.00	0.33	0.00	0.00	0.00	0.35	0.00	0.00	0.00	Antiskid plus other such as Signing & Lining, ladder bar	2005
O	Junction	Cork	71	RSRM Curragh, East of Lissarda. Junction on bend.	€10,224	10	0.00	0.20	0.60	0.00	0.67	0.00	0.00	0.00	0.70	0.00	0.00	0.00	Antiskid plus other such as Signing & Lining, ladder bar	2005
O	Length	Cork	71	RSRM Newmills E of Roscarbery. 1.2km series of bends.	€11,509	11	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year			
							F	S	M	F	S	M	F	S	M					
O	Length	Donegal	56	RSRM N-56-52, Smullen's corner, Falcarragh	€3,608	17	0.00	0.40	0.20	0.00	0.00	0.67	0.00	0.00	0.70	0.00	0.00	0.00	Crash barrier plus other such as Signing & Lining	2005
O	Length	Donegal	56	RSRM Lurgybrack School	€100,382	15	0.20	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.05	0.00	0.00	0.00	Junction Definition including buildouts, kerbing, sign & Line	2005
O	Length	Donegal	56	RSRM N-56-5, Drumbeagh	€6,007	16	0.20	0.00	0.20	0.00	0.00	0.33	0.00	0.00	0.35	0.00	0.00	0.00	Road Widening/Narrowing including removal or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2005
O	Length	Donegal	15	RSRM N15-36 / 37, Cloughfin/Clady junction	€30,069	14	0.20	0.00	0.00	0.00	0.33	1.00	0.00	0.00	1.05	0.00	0.45	0.00	RTL or junction treatment along route	2005
O	Length	Donegal	56	RSRM N56-53/4 ray, Ballyboe, Falcarragh	€14,433	18	0.00	0.00	0.40	0.00	0.00	0.00	0.33	0.00	0.00	0.45	0.00	0.00	Side road adjustment such as regrade, buildout or realign	2005
O	Junction	Donegal	56	RSRM N-56-74 / L-5872-1 Mulliaheep junction	€7,627	19	0.00	0.00	0.20	0.00	0.00	0.33	0.00	0.00	0.35	0.00	0.00	0.00	Side road adjustment such as regrade, buildout or realign	2005
O	Junction	Donegal	13	RSRM N-13-20, Slab road junction Burt chapel	€9,622	12	0.00	0.00	0.40	0.00	0.00	0.00	0.33	0.00	0.00	0.45	0.00	0.00	Sight distance	2005
O	Length	Donegal	13	RSRM Newtown to Drumbarnet	€24,056	13	0.20	0.00	1.00	0.67	0.33	1.67	0.33	0.76	0.45	1.75	0.45	0.45	Signing & Lining	2005
I	Junction	Dublin	1	RSRM Dorset Street - Circular Road North	€28,994	20	0.00	0.00	2.00	0.00	0.00	1.33	0.00	0.00	1.40	0.00	0.45	0.00	Antiskid & other such as pedestrian barrier, traffic signal upgrade or signage	2005

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year			
							F	S	M	F	S	M	F	S	M					
I	Junction	Dublin	4	RSRM Merchants quay - Ushers Quay - Bridge St Lower	€8,220	21	0.00	0.00	1.20	0.00	0.67	1.67	0.00	0.90	1.75	0.00	0.00	0.00	Antiskid & other such as pedestrian barrier, traffic signal upgrade or signage	2005
O	Junction	Galway	18	RSRM Tulla Road R462 Junction	€27,541	22	0.00	0.00	0.20	0.33	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	Side road adjustment such as regrade, buildout or realign	2005
O	Junction	Galway	63	RSRM Roanmore Cross	€22,425	23	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Kerry	69	RSRM Rea	€17,141	24	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Kerry	70	RSRM Knockaunroary junction, Cahersiveen	€265	25	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Kildare	9	RSRM Ballymount Construction	€70,260	26	0.00	0.00	0.20	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.35	0.00	RTL plus other such as Side Road Realignment or sight distance	2005
O	Length	Kilkenny	10	RSRM Lyrath to Scart	€9,741	27	0.20	0.40	0.60	0.00	0.00	2.33	0.00	0.00	0.00	2.45	0.00	0.00	Signing & Lining	2005
O	Length	Kilkenny	10	RSRM Outrath	€12,028	28	0.00	0.00	0.40	0.00	0.00	1.00	0.00	0.00	0.00	1.05	0.00	0.00	Signing & Lining	2005
O	Length	Kilkenny	76	RSRM Kilbride to Ahanure	€21,650	29	0.00	0.20	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Laois	8	RSRM Togher Roundabout	€24,056	31	0.00	0.20	0.40	0.00	0.00	0.67	0.00	0.00	0.00	0.70	0.00	0.00	Junction Definition including buildouts & sign & Line	2005
O	Junction	Laois	7	RSRM Redcastle to Clonenagh	€48,111	30	0.20	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Length	Laois	78	RSRM The Rushes	€7,077	32	0.20	0.20	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Laois	80	RSRM Laught Cross	€10,825	33	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Limerick	21	RSRM Garryduff Cross	€180,416	35	0.20	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.35	0.00	0.35	0.00	Sight Distance & Other	2005
O	Junction	Limerick	20	RSRM Creggane	€12,028	34	0.00	0.00	0.40	0.00	0.33	0.00	0.00	0.00	0.45	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Limerick	21	RSRM Junction with R515	€9,021	36	0.00	0.00	0.20	0.00	0.00	0.33	0.00	0.00	0.35	0.00	0.35	0.00	Signing & Lining	2005

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							F	S	M	F	S	M	F	S	M				
O	Junction	Longford	4	RSRM East approach to Dublin roundabout	€82,996	37	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Antiskid plus other such as Signing & Lining, ladder bar	2005
O	Junction	Longford	4	RSRM Lissardowan	€16,839	38	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	RTL	2005
O	Length	Longford	63	RSRM Barnacor	€12,028	39	0.00	0.00	0.80	0.00	0.33	0.00	0.00	0.00	0.45	0.00	0.00	Signing & Lining	2005
O	Junction	Longford	63	RSRM Kilashee West	€5,321	40	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Length	Longford	63	RSRM Rappareehill bends	€8,762	41	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
I	Length	Mayo	5	RSRM Knockaphunta	€18,042	43	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	Signing & Lining	2005
O	Junction	Mayo	59	RSRM Bellacorick PS	€18,042	45	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Crash barrier plus other such as Signing & Lining	2005
O	Narrow bridge	Mayo	59	RSRM Erriff Bridge	€6,014	46	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Crash barrier plus other such as Signing & Lining	2005
O	Bend	Mayo	26	RSRM Coolcronan	€18,042	44	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Road Widening/Narrowing including removal or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2005
O	Length	Mayo	5	RSRM Clonkeen	€7,217	42	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Length	Mayo	83	RSRM Corraun to Grallagh	€10,700	47	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
O	Junction	Meath	51	RSRM Halltown junction at post N51-0150	€15,458	49	0.20	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Sight Distance & Other	2005
O	Junction	Meath	3	RSRM Kilcarn - Cannistown	€36,083	48	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	Signing & Lining	2005
O	Narrow bridge	Meath	52	RSRM Maudlin Bridge	€19,324	50	0.00	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.00	Traffic Lights on narrow bridge	2005
I	Junction	Sligo City	4	RSRM Pearse Rd, Mail Coach Rd, Junction	€24,056	66	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	Antiskid	2005

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In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year	
							F	S	M	F	S	M	F	S	M			
I	Length	Monaghan	2	RSRM Coolshannagh, Monaghan Town	€23,749	52	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
I	Junction	Monaghan	2	RSRM Broomfield Junction	€6,637	51	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.00	2005
O	Junction	Nth Tipperary	7	RSRM Roscrea Golf club Racht Hall	€36,074	53	0.00	0.20	0.40	0.33	0.00	0.00	0.00	0.38	0.00	0.00	0.00	2005
O	Junction	Nth Tipperary	8	RSRM Lackins Cross Littleton Thurles	€48,111	54	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
O	Junction	Nth Tipperary	52	RSRM Puckaun Junction,	€11,159	55	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
O	Junction	Offaly	62	RSRM Drumakeenan School	€60,139	57	0.00	0.20	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.35	0.00	2005
O	Junction	Offaly	52	RSRM Charleville Gate	€7,217	56	0.00	0.00	0.20	0.00	0.00	0.00	0.33	0.00	0.00	0.35	0.00	2005
O	Length	Offaly	80	RSRM Clonminch to Derrybeg	€9,622	58	0.00	0.40	0.20	0.00	0.00	0.00	0.67	0.00	0.00	0.70	0.00	2005
O	Junction	Roscommon	6	RSRM Creggan	€48,111	61	0.00	0.00	0.20	0.33	0.00	0.00	0.38	0.00	0.00	0.00	0.00	2005
O	Junction	Roscommon	61	RSRM Four mile house	€48,111	62	0.20	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
O	Junction	Roscommon	61	RSRM Shankill	€20,917	64	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	2005
O	Junction	Roscommon	5	RSRM Cloonfree east	€36,083	59	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
O	Junction	Roscommon	5	RSRM Cloonfree west	€30,470	60	0.00	0.00	0.20	0.00	0.33	0.00	0.00	0.00	0.45	0.00	0.00	2005
O	Junction	Roscommon	61	RSRM Grange	€25,626	63	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
O	Junction	Sligo	17	RSRM Ropedified junction	€17,346	71	0.00	0.40	0.60	0.00	0.00	0.00	0.33	0.00	0.00	0.35	0.00	2005
O	Length	Sligo	15	RSRM Cashelgarran	€30,069	69	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2005
O	Length	Sligo	17	RSRM Muckelvy, Tubbercurry	€12,028	70	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	2005
I	Junction	Sligo City	4	RSRM Pearse Rd, Kierans Rd. Junction	€30,069	65	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	2005

Appendix 2-Solution Type.																	
In/ Out BUA	Road Type	Local Authority	Rt	Scheme Description	Year 2002 costs	Sch No	Collisions before per year			Collisions after per year			Collisions after per year, adjusted			Short Solution Description	Year
							F	S	M	F	S	M	F	S	M		
I	Junction	Sligo City	15	RSRM Rosses Point, Bundoran	€18,042	67	0.00	0.00	0.40	0.00	0.00	0.67	0.00	0.00	0.70	Antiskid	2005
I	Junction	Sligo City	16	RSRM Duck Street Junction (N16) Part 2	€18,042	68	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.05	Junction realignment	2005
I	Junction	Sth Dublin	81	RSRM N81 Glenview Roundabout	€22,787	74	0.00	0.00	0.80	0.00	0.00	2.00	0.00	0.00	2.10	Antiskid	2005
I	Junction	Sth Dublin	81	RSRM N81 Belgard Road Junction	€26,101	73	0.00	0.00	2.40	0.00	0.33	1.67	0.00	0.45	1.75	Antiskid & other such as pedestrian barrier, traffic signal upgrade or signage	2005
I	Junction	Sth Dublin	4	RSRM N4/M50 Roundabout	€24,056	72	0.20	0.20	4.20	0.00	0.33	4.00	0.00	0.45	4.20	Junction realignment	2005
I	Junction	Sth Dublin	81	RSRM N81/M50 Roundabout	€7,215	75	0.00	0.00	1.20	0.00	0.00	1.67	0.00	0.00	1.75	Junction realignment	2005
O	Length	Waterford	25	RSRM N25 Traffic Route Treatment	€45,705	77	1.40	4.60	14.00	1.00	1.00	10.00	1.14	1.35	10.50	RTL or junction treatment along route	2005
I	Length	Waterford City	25	RSRM Cork Road, at Land Registry Waterford	€22,019	76	0.00	0.00	2.40	0.00	0.00	1.33	0.00	0.00	1.40	Pedestrian Facilities (central	2005
O	Length	Westmeath	55	RSRM Ballykeeran	€10,825	78	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Crash barrier plus other such as Signing & Lining	2005
O	Junction	Wexford	25	RSRM Larkins Cross	€36,083	81	0.00	0.40	0.80	0.33	0.00	1.00	0.38	0.00	1.05	Road Widening/ Narrowing including removal or introduction of deceleration or acceleration lanes, plus other such as Signing & Lining, pedestrian facilities	2005
O	Junction	Wexford	11	RSRM Inch N11	€32,475	79	0.00	0.00	0.40	0.00	0.00	0.33	0.00	0.00	0.35	Signing & Lining	2005
O	Junction	Wexford	25	RSRM Clonard	€7,217	80	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	Signing & Lining	2005
I	Junction	Wicklow	11	RSRM Kilarney Rd Western Roundabout, Anti Skid Surface	€18,975	82	0.00	0.00	0.40	0.00	0.00	0.67	0.00	0.00	0.70	Antiskid	2005





<b>Appendix 3 : Assuming "Regression to Mean" effect of 30%</b>					
<b>Year of Treatment</b>	<b>% Reduction in collisions</b>			<b>Cost Saving per annum</b>	<b>Avg Annual Rate of Return "Willingness to Pay" ("k-test" method, k&gt;1 increase relative to controls)</b>
	<b>F</b>	<b>S</b>	<b>M</b>		
<b>2002</b>	-44%	-28%	-1%	€5,451,710	413%
<b>2003</b>	-6%	17%	21%	-€1,532,766	-2%
<b>2004</b>	-67%	36%	0%	€4,744,138	402%
<b>2005</b>	24%	10%	20%	-€4,322,430	-195%
<b>Overall</b>				<b>€4,340,651</b>	<b>154%</b>

<b>Appendix 4:</b>			
<b>The Chi Squared Test for 2002 schemes</b>			
	<b>Site</b>	<b>Control</b>	<b>Totals</b>
<b>Before</b>	320	10025	10345
<b>After</b>	165	7955	8120
<b>Totals</b>	485	17980	18465
<b>Chi squared =</b>			<b>19.62</b>
<b>The Chi Squared Test for 2003 schemes</b>			
	<b>Site</b>	<b>Control</b>	<b>Totals</b>
<b>Before</b>	330	9655	9985
<b>After</b>	220	8010	8230
<b>Totals</b>	550	17665	18215
<b>Chi squared =</b>			<b>5.94</b>
If Chi sq >3.84 - result is significant at 5%			
If Chi sq >6.635 - result is significant at 1%			
If Chi sq >10.83 - result is significant at 0.1%			
<b>Significance Levels</b>			
<u>Significance</u>	<u>Confidence</u>	<u>Subjective</u>	
<u>Level</u>	<u>Level</u>	<u>Interpretation</u>	
1%	99%	Highly Acceptable	
5%	95%	Acceptable	
10%	90%	Fair	
20%	80%	Indicative	

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