NRA
An tÚdarás um Bóithre Náisiúnta
National Roads Authority
Safety

# The Accident Remedial Measures Programme

## Evaluation of Programme II Schemes Implemented in 1996 and 1997


Finbarr Crowley

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# The Accident Remedial Measures Programme
# Evaluation of Programme II Schemes Implemented in 1996 and 1997

**2005**

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**RS. 465**

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## Acknowledgements

It is a pleasure to acknowledge the contributions of all those involved in this programme. Particular thanks are due to the Finbarr Crowley, the NRA's safety team and to the many Local Authority engineers who identified and submitted the schemes and subsequently implemented the appropriate remedial measures.

# Foreword

In 2001, the NRA published an evaluation of the first group of low cost accident remedial schemes completed on the network. This report is the second in the series and it presents the results for the second group of accident remedial schemes that were completed during 1996 and 1997. Sufficient time has now elapsed to allow these schemes to be evaluated in terms of accident reductions. The results have exceeded targets and expectations. We in the NRA look forward to a continuing contribution to the Government Strategy to reduce traffic crashes and human suffering.

# Executive Summary

Programme II, 1996/1997, is the second in a series which has its' origin in a decision by the National Roads Authority (NRA) in 1994 to provide dedicated funding to a low cost road accident remedial measures programme. During 1996 and 1997 the NRA in co-operation with 24 of the 36 local authorities in the country completed accident remedial measures at 151 locations at a total cost of £1.83M. The following report is an evaluation of the effectiveness of these schemes.

The evaluation is based on the numbers and cost of injury accidents before and after completion of the schemes as recorded on the NRA's national accident database. The assessment was performed by both the Willingness To Pay **(WTP)** method and the Average Cost **(AC)** method. There is approximately an 8-fold difference in the results from the two methods with the WTP method showing the greater improvement. This results from the fact that the WTP method takes account of the reduction in severity of accidents in the after period in addition to the reduction in numbers.

For the group of schemes as a whole, there were on average 10.34 fatal accidents per annum during the before period and 4.49 during the after period. Corresponding figures for serious injury accidents are 36.01 before and 22.12 after: for minor injury accidents 69.29 before and 76.62 after.

From these figures, it can be seen that Programme II was very effective in reducing fatal and serious injury accidents but had little effect on the numbers of minor injury accidents. This phenomenon was also observed in Programme I.

An (average) annual rate of return of 408% was achieved (WTP method) compared with 595% for Programme I.

Average annual accidents costs at the treated locations declined from £14.6M to £7.1M.

An estimated 18 fatal and 43 serious injury accidents have been saved through Programme II.

**Difficulties in the evaluation**

There were some difficulties in carrying out the assessment due to some inaccuracy in the plotting of the accidents on the NRA database and in identifying the extent of some of the schemes. Most of those difficulties have been overcome giving a reasonably good overall evaluation for the programme. However, the original raw data used in the assessment is available to enable local authorities to re-evaluate the schemes in their area should they choose to do so. All the data is available in MapInfo format to facilitate such options.

**Additional Charts and Tables**

Chapter 1 presents the results of the effectiveness of the programme. In the succeeding chapters of the report the schemes are analysed to give comparisons by county, route, solution type and accident type. These assessments were done to try to establish what types of remedial measures appear to be effective and which ones less so and also to compare the effectiveness in dealing with the various primary collision types.

Generally, signing and lining schemes show relatively good returns, mainly due to the comparatively low cost nature of such schemes. This in turn is reflected in the performance in reducing accident types 5 and 6, which are primarily turning accidents at or near junctions.

Schemes aimed at reducing single vehicle accidents appear to be the least effective. This may imply the measures being used in such cases are not the right ones, that they are not being implemented effectively enough or alternatively, that the solution to such accidents may be outside the scope of these schemes.

Lastly, studies of the best and worst schemes, especially when examined by the AC method, show clearly the need to ensure each site and the relevant accidents are studied properly to identify both the nature and causes of the accidents and efficient and appropriate solutions.

**Explanatory Table**

The table below is to clarify the table headings used in the main spreadsheet or database used to evaluate Programme II.

| Column Name | Definition | |
|---|---|---|
| Scheme Reference | Unique number for each scheme | |
| Local Authority | County Name, only | |
| Description | Location or Scheme Name | |
| Route No. | National Route Number | |
| Approved Cost | Accident Remedial Budget | |
| X | National Grid "X" Co-ordinate | |
| Y | National Grid "Y" Co-ordinate | |
| MapInfo Indicator | Cross reference to MapInfo Table | |
| In/Out BUA | Inside or Outside Build Up Area | Within a Speed Limit |
| Imp/Unimp | Improved or Unimproved Section of road | |
| Road Type | Location type, school, junction, bend etc | |
| Mkr Post Start | Start of scheme referenced to Marker Posts Applies to all sites | |
| Mkr Post End | End of scheme for road length schemes | |
| Problem Type | Codes for problem | |
| Problem Type, Description | Descriptions of problems | |
| Accident Type | Codes for primary collision types | |
| Accident Type, Description | Descriptions of collision types | |
| Solution | Codes for solution types | |
| Solution, Description | Descriptions of solutions | List of solutions applied |
| Additional Notes | Relevant Notes | |
| Short Solution Description | Summary of solution, based on primary expenditure of the scheme | Only one solution type is used per scheme |
| Acc Years | Years used in assessing the scheme | Before |
| Total Years | Number of years, based on Acc Years | Before and after |
| Total PIA | Number of Personal Injury Accidents | |
| Material | Material damage accidents, not used in assessment of schemes due to insufficient after data but is shown on the database | |
| Total Accs | Number of all accidents, for reference only | Includes material damage accidents |
| Accident Cost Per Annum, WTP | Estimate of Cost of accidents per annum using the Willingness To Pay Method | |
| Accident Cost Per Annum, AC | Estimate of Cost of accidents per annum using the Average Cost Method | |
| Completion Date | Completion date of scheme | |
| Acc Years After | Years used in assessing the scheme | After |
| Total Yrs After | Number of years, based on Acc Years | After |
| 1st Year Rate of Return %, WTP | (WTP Cost Before-WTP Cost After)/ Approved Cost in Percent | |
| 1st Year Rate of Return %, AC | (Average Cost Before-Average Cost After) /Approved Cost in Percent | |

# 1. Evaluation of Programme II

This chapter summarises the overall effects, in accident and monetary terms, of the implementation of programme II.

## 1.1. Cost

The 151 schemes approved in 1996 and 1997 and completed mainly in those years under the Accident Remedial Measures Programme achieved their overall target as set out in the original requirement of the programme. The programme required that schemes achieve a 40% rate of return in the first year after completion. The cost of the schemes was IR£1.83M.

## 1.2. Method of Evaluation, Average Cost of Willing to Pay Cost?

The difficulty in deciding on what is a successful method of treatment and what is not lies in the two methods of evaluation, AC and WTP.

If the overall cost of accidents is the measure of success the Willingness To Pay (WTP) method is definitely the measure to use. However, a problem with that method is that even a small number of serious and especially fatal accidents in the before period will result in a good rate of return, almost regardless of the expenditure.

Conversely, the Average Cost (AC) method may indicate a poor return because the frequency of accidents in the after period may be the same as in the before period. The AC method will not identify savings in lives and injuries resulting from reductions in the severity of accidents.

For the reasons outlined above both methods have been used in all the evaluations and both sets of results considered together in deciding if particular schemes or groups of schemes are successful or not.

## 1.3. Returns

Using the Average Cost method of assessment the 151 schemes completed have achieved an overall rate of return of 54% each year since completion. The total return for the 3.2 years after period is 170%.

However, using the Willingness To Pay method, the return has been eight fold higher at 407% per annum or 1271% for the whole after period.

| | Totals Before | Ave Per Annum Before | |
|---|---|---|---|
| Total Years, Before | 8.8 | | |
| Fatal, Before | 91 | 10.34 | |
| Serious Injuries, Before | 317 | 36.01 | |
| Minor Injuries, Before | 610 | 69.29 | |
| Total Injury Accidents Before | 1019 | 115.74 | |
| Material | 533 | 60.54 | |
| Total Accidents | 1552 | 176.28 | |
| Accident Cost, WTP | IR£128.3M | IR£14.6M | |
| Accident Cost, AC | IR£76.6M | IR£8.76M | |
| | **Totals After** | **Ave Per Annum After** | **Total Savings** |
| Total Years After | 3.12 | | |
| Fatal, After | 14 | 4.49 | **18.24** |
| Serious Injuries, After | 69 | 22.12 | **43.31** |
| Minor Injuries, After | 239 | 76.62 | **-22.88** |
| Total Injury Accidents After | 325 | 104.19 | **36.02** |
| Total Accidents | | | |
| After Accident Cost, WTP | IR£22.2M | IR£7.1M | **IR£23.3M** |
| After Accident Cost, AC | IR£24.0M | IR£7.7M | **IR£3.1M** |
| **First Year RoR %, WTP** | | **408%** | **1271%** |
| **First Year RoR %, AC** | | **55%** | **171%** |

*Table 1.3.1Summary of Savings*

## 1.4. Savings

In accident terms, 18 fatal and 43 serious injury accidents have been saved, however there has been an additional 22 minor injury accidents across the schemes in the after period. This represents an estimated saving of 36 injury accidents. No assessment has been made for savings in material damage accidents due to the lack of data relating to such accidents.

In monetary terms, these schemes have resulted in a saving of £23M in accident reductions by the WTP method and IR£3.1M by the AC method.

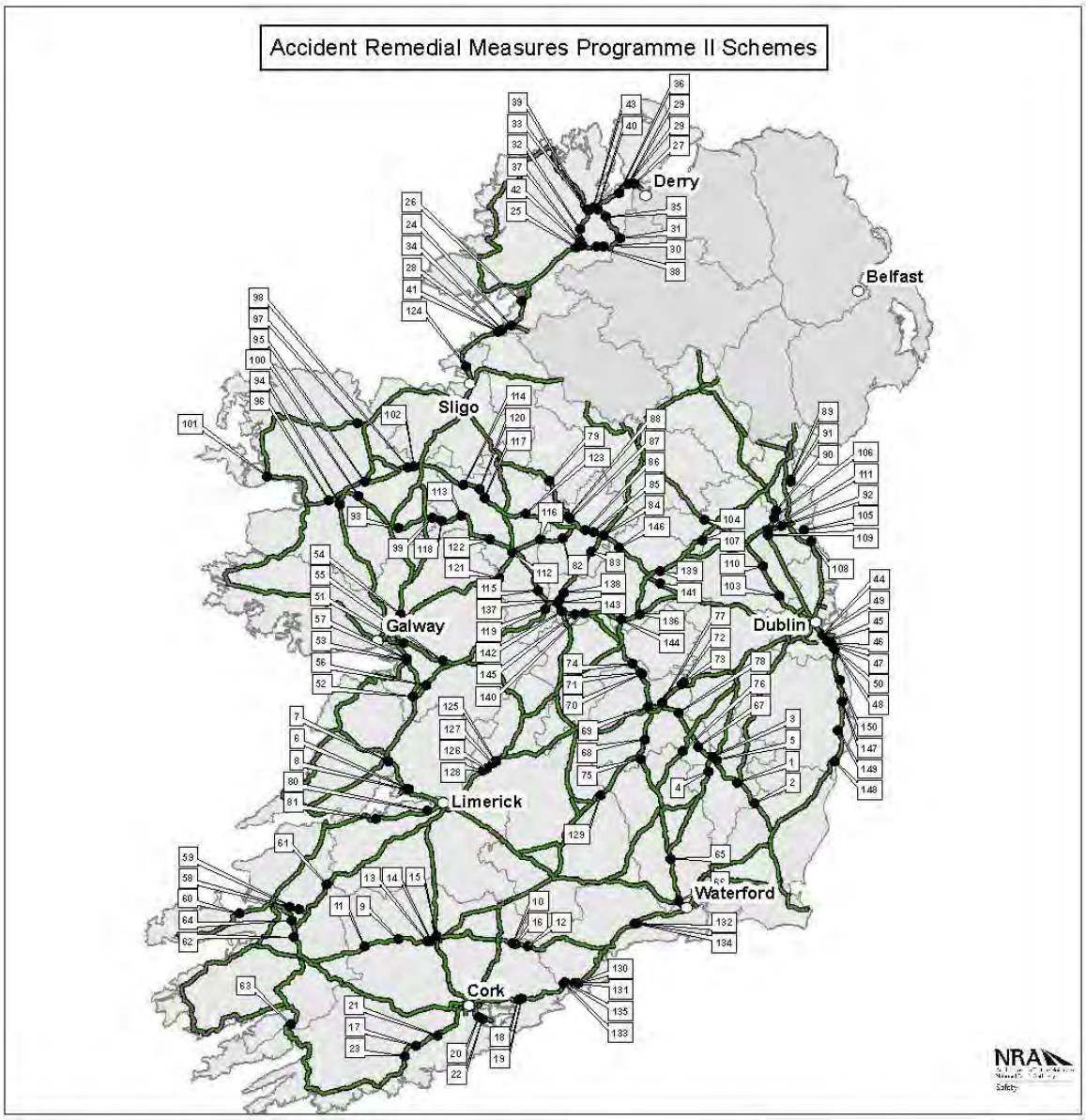
These figures represent minimum savings. The before period used in assessing the accidents was on average 8.8 years, being between 8 and 10 years in most cases. Lower traffic figures and lower per annum estimates of before costs influence the savings achieved.

The reason for using the long before period was that the NRA accident database commenced in 1988 and the accident history submitted by the local authorities for many of the schemes started at that time. Some applications relied on one or two year's data which would have given unusually high average annual costs for the before period, others had fairly long accident histories.

To fairly assess the schemes across the programme it was decided to use the full database, which then resulted in the longer before period. Similarly, some schemes were later in finishing than others and a small number have only one or two year's accident data in the after period.

## 1.5. Future Evaluation

To assist an on-going evaluation of all the schemes, the database has been mapped in MapInfo and the area of interest for each scheme is clearly identifiable. Improvements in the NRA's mapped data, which are presently being carried out, will also assist in future evaluations.




**Background Mapping:**
*GIS_GeneralInfo\NRASafety_Mapping\NRASafety_MapData\NRASafety_Mapping.gdb*
**Additional Data:**
*Accident Remedial Measures Programme II Database*

**Disclaimer:**
*The data in this map is presented as is without warranty of any kind. The NRA assumes no responsibility for any liability that may result from the reader's own interpretation of the data.*

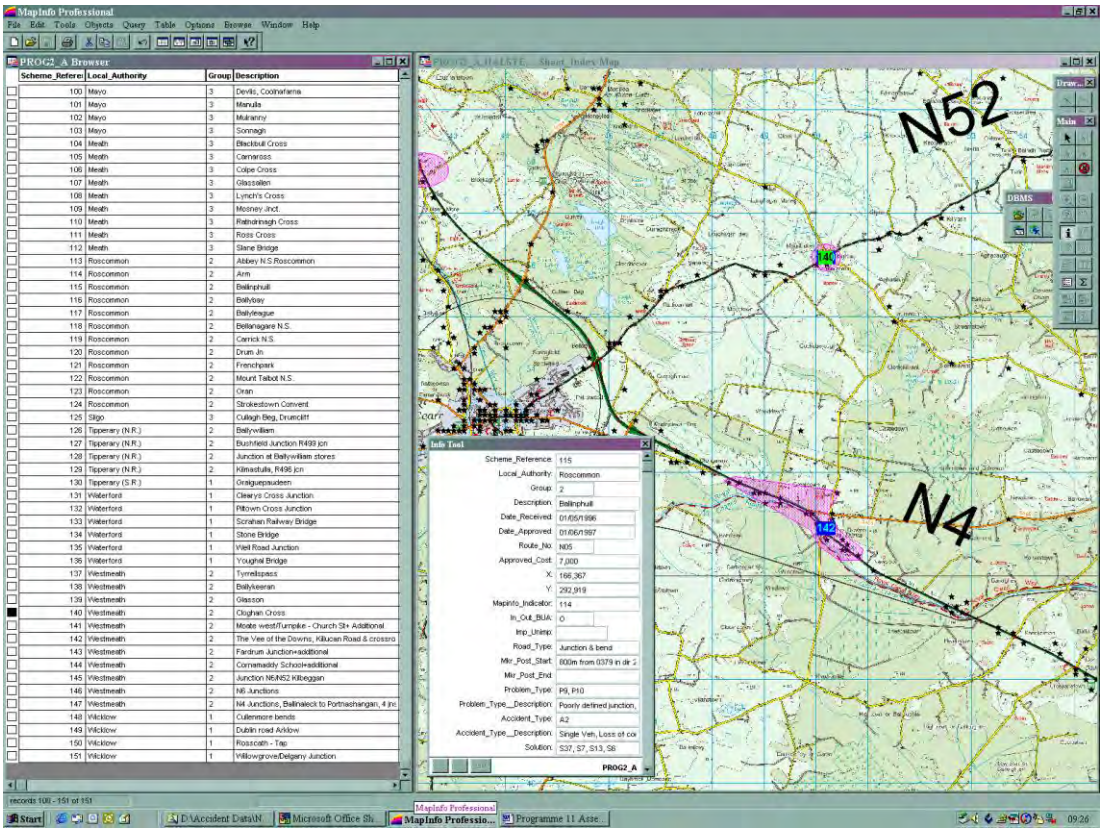
**For more information contact:** *infosafety@nra.ie*

**Background Notes**
*To assist on-going evaluation of all the schemes, the database has been mapped and the area of interest for each scheme is clearly identifable.*
*Improvements in the NRA mapped accident data, which are presently being carried out, will also assist in future evaluations.*
*For more information on the schemes shown here see Appendix 1.*

**Legend**
National Road Network 2000
Programme II Schemes
Major Towns

**Published by:**
*National Roads Authority*
*St. Martin's House*
*Waterloo Road*
*Dublin 4*

**Scale:** *1:2,300,000*




Shown above is a MapInfo screen showing a section of map at 1:50,000 scale, the programme II browser window and the info panel. The shaded areas represent the area of interest for the individual schemes. (In the above screen Scheme 140 has been selected, indicated by the black box and the shading on the reference number, and the information for scheme 115 is displayed.)

# 2. Comparative Results by County

In this chapter, comparisons between local authorities are presented in respect of expenditure, the number of schemes, cost per scheme and effectiveness.

## 2.1. Expenditure by County

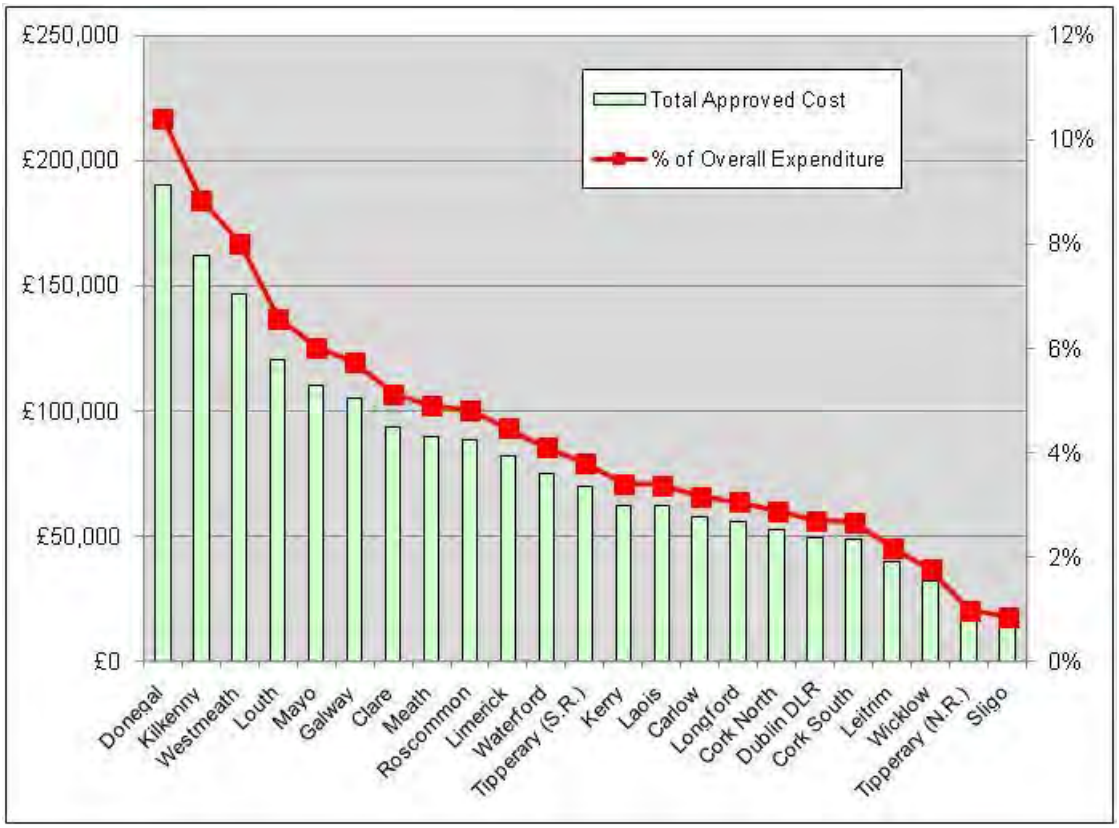
Table 2.1.1 below summarises the expenditure in each county on Programme II. As can be seen from Graph 2.1.1, the uptake for the programme varied considerably from county to county. Hopefully, more local authorities are availing of the programme than was previously the case.

Generally, a small number of local authorities completed more than 10 schemes and the average expenditure in those counties per scheme was below IR£10,000. The overall results of the schemes in those counties was good, indicating that the programme was implemented as it was intended, that is, to identify **treatable** accident clusters, identify the primary problem and apply the most appropriate solution.

| County Summary, Sorted by Expenditure | | | | | | |
|---|---|---|---|---|---|---|
| Local Authority | Number of Schemes | Total Approved Cost IR£ | Average Cost per Scheme IR£ | % of Overall Expenditure | % RoR Per Annum, WTP Method | % RoR Per Annum, Average Cost Method |
| Donegal | 21 | 190,500.00 | 9,071.43 | 10.40% | 944.60% | 165.08% |
| Kilkenny | 2 | 162,000.00 | 81,000.00 | 8.85% | 92.90% | -25.83% |
| Westmeath | 11 | 147,000.00 | 13,363.64 | 8.03% | 351.62% | -19.22% |
| Louth | 4 | 120,500.00 | 30,125.00 | 6.58% | 342.92% | 23.44% |
| Mayo | 10 | 110,500.00 | 11,050.00 | 6.03% | 431.94% | 151.48% |
| Galway | 7 | 105,000.00 | 15,000.00 | 5.73% | 381.57% | -119.56% |
| Clare | 3 | 94,000.00 | 31,333.33 | 5.13% | 183.89% | 123.54% |
| Meath | 9 | 90,000.00 | 10,000.00 | 4.91% | 308.32% | 62.77% |
| Roscommon | 12 | 88,500.00 | 7,375.00 | 4.83% | 334.08% | 86.06% |
| Limerick | 2 | 82,000.00 | 41,000.00 | 4.48% | -69.56% | 81.65% |
| Waterford | 6 | 75,000.00 | 12,500.00 | 4.10% | -55.77% | -66.96% |
| Tipperary (S.R.) | 1 | 70,000.00 | 70,000.00 | 3.82% | 206.21% | 83.69% |
| Kerry | 7 | 62,500.00 | 8,928.57 | 3.41% | 824.91% | -26.78% |
| Laois | 12 | 62,000.00 | 5,166.67 | 3.39% | 1348.07% | 256.48% |
| Carlow | 5 | 58,000.00 | 11,600.00 | 3.17% | 1003.71% | -57.72% |
| Longford | 7 | 56,000.00 | 8,000.00 | 3.06% | 351.45% | 11.21% |
| Cork North | 8 | 53,000.00 | 6,625.00 | 2.89% | 191.63% | 142.12% |
| DunLaoghaire /Rathdown | 7 | 49,500.00 | 7,071.43 | 2.70% | 1070.79% | -152.17% |
| Cork South | 7 | 49,000.00 | 7,000.00 | 2.68% | 238.06% | 365.10% |
| Leitrim | 1 | 40,000.00 | I40,000.00 | 2.18% | 297.25% | 104.62% |
| Wicklow | 4 | 32,500.00 | 8,125.00 | 1.77% | -994.33% | 324.48% |
| Tipperary (N.R.) | 4 | 18,000.00 | 4,500.00 | 0.98% | 621.21% | -575.40% |
| Sligo | 1 | 16,000.00 | 16,000.00 | 0.87% | 799.78% | 156.93% |

*Table 2.1.1 Expenditure summary by county*

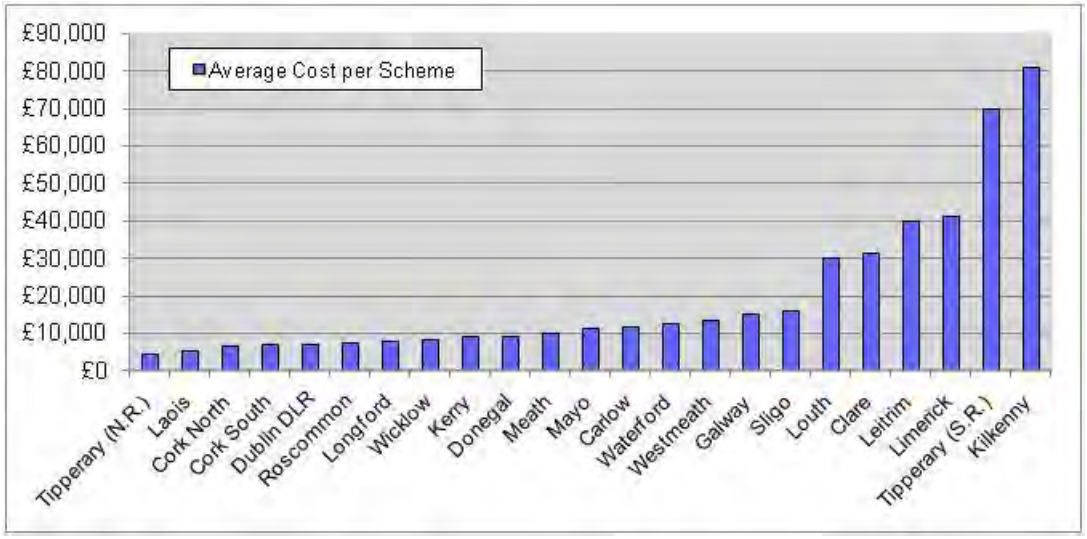
In the case of the accident remedial measures programme, **treatable** means the identified problem can be treated by the application of simple, cost efficient methods. As will be shown later in the report, treatable problems tend to be those in which casualties result from relatively simple crashes in which drivers make critical mistakes. The best improvements appear to be to have been in crashes involving turning movements and pedestrian accidents. The worst results appear to be those solutions aimed at reducing single vehicle accidents.



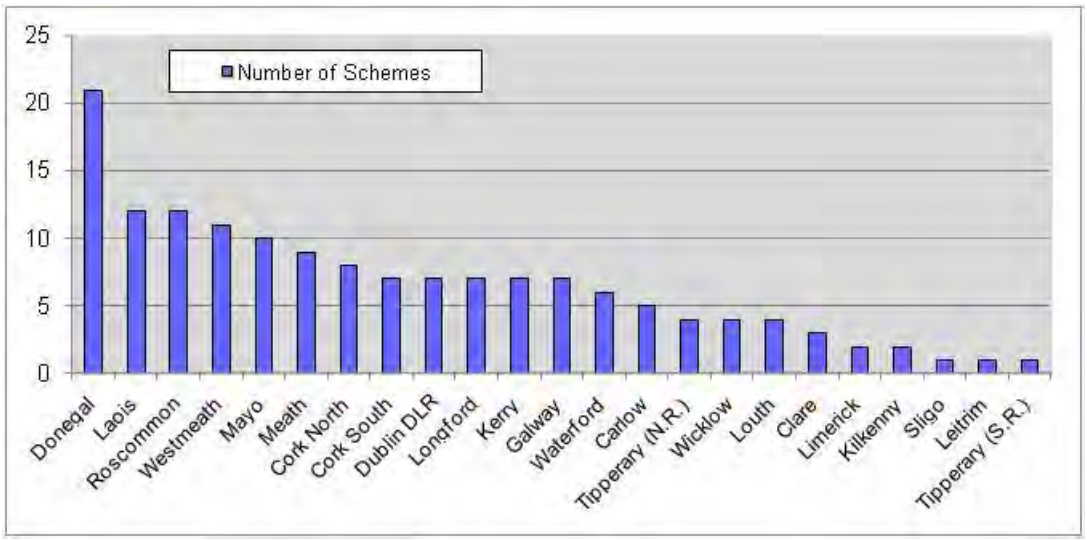

*Graph 2.1.1 Total approved cost and % of overall expenditure by county*

## 2.2. Average Cost per Scheme

The following two graphs show the average cost per scheme and the numbers of schemes in each county. As can be seen from the graph some counties chose to do a small number of expensive schemes while others completed a larger number of less expensive schemes.




*Graph 2.2.1 Average cost of schemes by county*



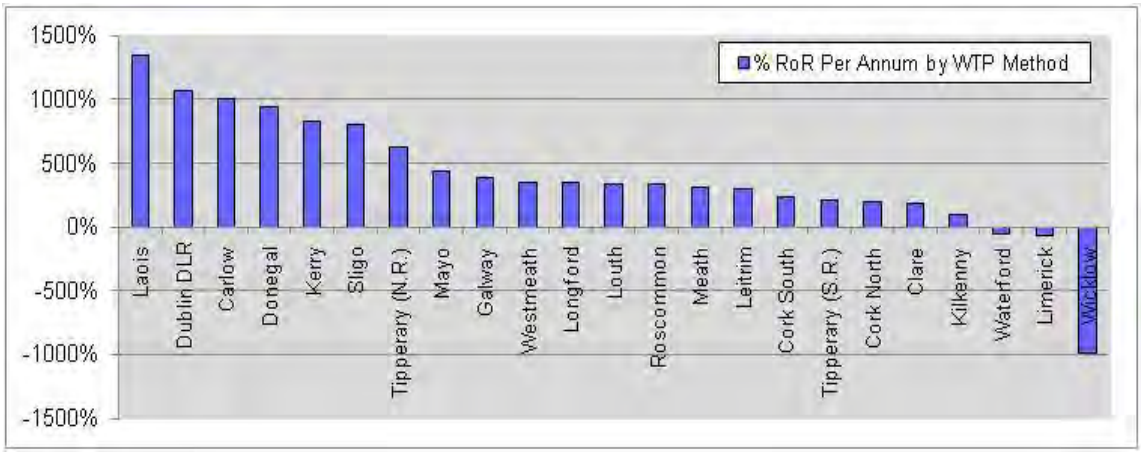

*Graph 2.2.2 Number of schemes per county*

Donegal completed 21 schemes at a total cost of IR£193,000 which was both the largest number of schemes in any county and the largest allocation for any county. Kilkenny completed 2 schemes at a total cost of IR£162,000. The Rate of Return (RoR) for the group of schemes in Donegal is far higher than that for the Kilkenny schemes. That is not unexpected in that even with a good return or saving in accidents the costs of the schemes themselves influence the RoR. More expensive schemes give poorer rates of returns.

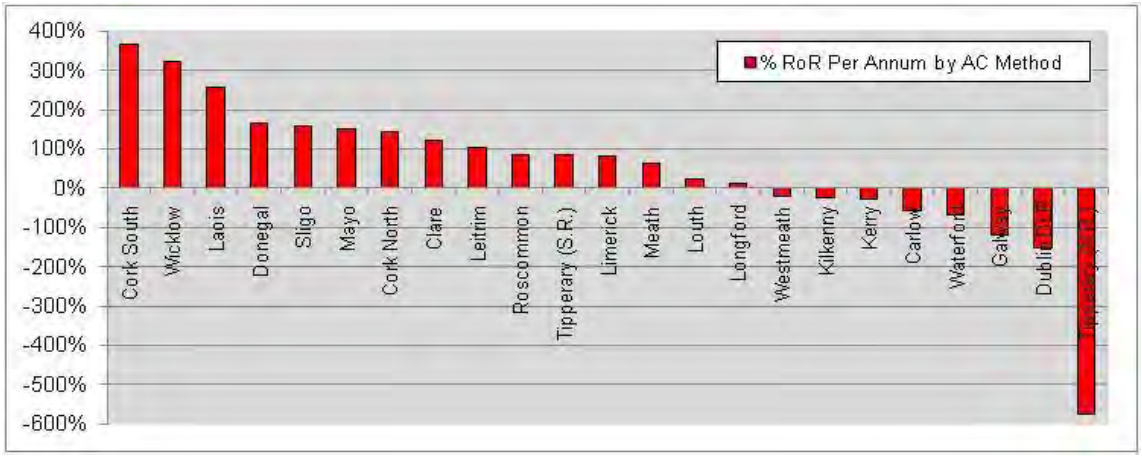
## 2.3. Rates of Return (RoR)

In assessing the eligibility of schemes an important decision has to be made in the case of each local authority as to how to decide on which schemes to proceed with. As the purpose of this particular programme is to reduce accidents the focus should be on that. There are other factors and pressures on local authorities in relation to locations with perceived accident and /or traffic management problems.

To enable the staff in any local authority to concentrate on accident prevention and reduction the accident data has to be available and has to be used to identify possible locations. Once a number of sites have been identified they should each be investigated, assessed and tested using the same criteria. This should ensure there is an available pool of schemes to be completed and a rational method of deciding on the priority of the schemes.




*Graph 2.3.1 County RoR by WTP method*




*Graph 2.3.2 County RoR by AC method*

## 2.4. Future Trends

Increasingly, the NRA is being required to complete numbers of schemes on a restricted budget. As this trend continues, there will be increasing pressure to allocate schemes nationally on an estimated accident savings basis. In such circumstances the onus will increasingly be on local authorities to promote schemes likely to save more accidents per Euro spent.

Hopefully, the improved accident database and better a understanding of the purpose of this programme will encourage a levelling out of the average cost of the schemes and improve the RoR by applying the selection criteria correctly.

# 3. Comparative Results by National Route

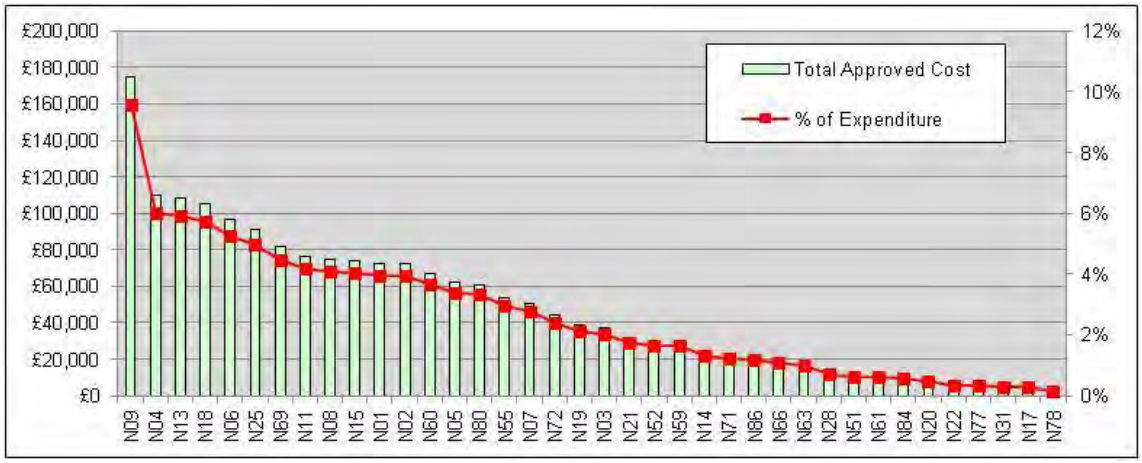
## 3.1. Expenditure per National Route

The completed schemes have been analysed per national route. This is for information only as there is no logic in comparing routes as most national routes pass through a number of local authorities. What might be useful may be to compare accidents on each of the national routes with the expenditure on each route to identify possible gaps in expenditure.

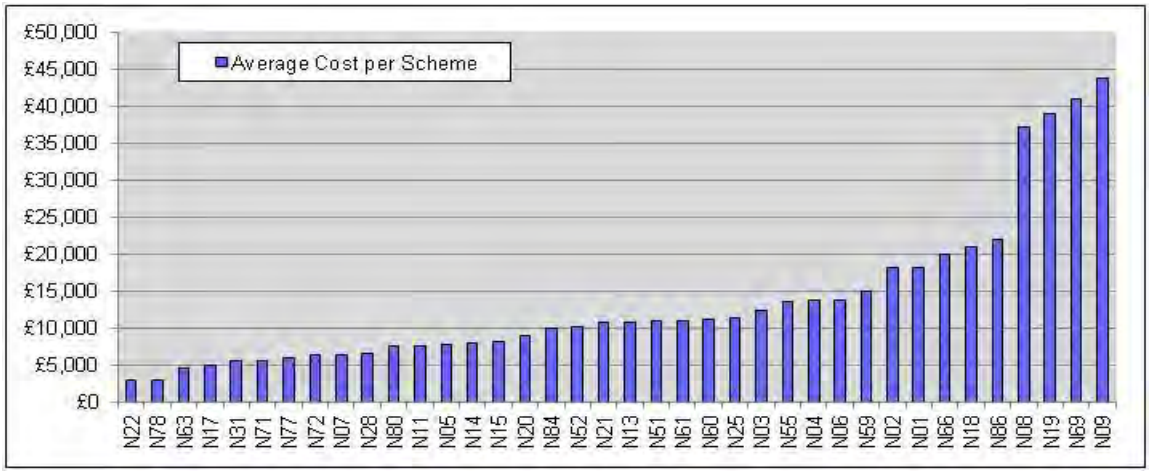
| Route Summary Sorted by Route Number | | | | | | |
|---|---|---|---|---|---|---|
| **Route No** | **Total Approved Cost IR£** | **No. of Schemes** | **Average Cost per Scheme IR£** | **% of Expenditure** | **% Rate of Return per Annum, WTP Method** | **% Rate of Return per Annum, AC Method** |
| N01 | 72,750 | 4 | 18,187.50 | 3.97% | 567.18% | 155.31% |
| N02 | 72,250 | 4 | 18,062.50 | 3.94% | 261.41% | -26.06% |
| N03 | 37,000 | 3 | 12,333.33 | 2.02% | 698.71% | -152.69% |
| N04 | 110,000 | 8 | 13,750.00 | 6.01% | 394.67% | -58.97% |
| N05 | 62,000 | 8 | 7,750.00 | 3.39% | 810.71% | 145.79% |
| N06 | 96,500 | 7 | 13,785.71 | 5.27% | 846.61% | 63.96% |
| N07 | 50,500 | 8 | 6,312.50 | 2.76% | 1241.30% | -89.08% |
| N08 | 74,500 | 2 | 37,250.00 | 4.07% | 195.39% | 89.87% |
| N09 | 175,000 | 4 | 43,750.00 | 9.56% | 227.37% | -28.70% |
| N11 | 76,500 | 10 | 7,650.00 | 4.18% | 277.51% | -15.32% |
| N13 | 108,300 | 10 | 10,830.00 | 5.91% | 1260.86% | 42.89% |
| N14 | 24,000 | 3 | 8,000.00 | 1.31% | 606.01% | 275.49% |
| N15 | 74,200 | 9 | 8,244.44 | 4.05% | 561.27% | 305.96% |
| N17 | 5,000 | 1 | 5,000.00 | 0.27% | -6213.72% | -2510.83% |
| N18 | 105,000 | 5 | 21,000.00 | 5.73% | 379.34% | -40.85% |
| N19 | 39,000 | 1 | 39,000.00 | 2.13% | 18.76% | 128.76% |
| N20 | 9,000 | 1 | 9,000.00 | 0.49% | 477.10% | 313.85% |
| N21 | 32,000 | 3 | 10,666.67 | 1.75% | 942.08% | -52.31% |
| N22 | 6,000 | 2 | 3,000.00 | 0.33% | 493.90% | -557.96% |
| N25 | 91,000 | 8 | 11,375.00 | 4.97% | -28.73% | -34.49% |
| N28 | 13,000 | 2 | 6,500.00 | 0.71% | -1412.44% | 289.71% |
| N31 | 5,500 | 1 | 5,500.00 | 0.30% | -98.33% | 760.86% |
| N51 | 11,000 | 1 | 11,000.00 | 0.60% | -1979.35% | -171.19% |
| N52 | 30,500 | 3 | 10,166.67 | 1.67% | 322.04% | 463.06% |
| N55 | 54,000 | 4 | 13,500.00 | 2.95% | 200.29% | 90.67% |
| N59 | 30,000 | 2 | 15,000.00 | 1.64% | 1223.28% | 390.57% |
| N60 | 67,000 | 6 | 11,166.67 | 3.66% | -18.80% | 107.43% |
| N61 | 11,000 | 1 | 11,000.00 | 0.60% | 0.00% | 0.00% |
| N63 | 18,500 | 4 | 4,625.00 | 1.01% | 570.55% | 72.38% |
| N66 | 20,000 | 1 | 20,000.00 | 1.09% | 12.19% | 83.69% |
| N69 | 82,000 | 2 | 41,000.00 | 4.48% | -69.56% | 81.65% |
| N71 | 22,500 | 4 | 5,625.00 | 1.23% | 1674.74% | 618.41% |
| N72 | 44,000 | 7 | 6,285.71 | 2.40% | 133.23% | 107.00% |
| N77 | 6,000 | 1 | 6,000.00 | 0.33% | 1961.35% | 557.96% |
| N78 | 3,000 | 1 | 3,000.00 | 0.16% | -505.36% | -836.94% |
| N80 | 61,000 | 8 | 7,625.00 | 3.33% | 904.56% | 96.04% |
| N84 | 10,000 | 1 | 10,000.00 | 0.55% | -2899.61% | -585.86% |
| N86 | 22,000 | 1 | 22,000.00 | 1.20% | 419.25% | 76.09% |
| **Total** | **1,831500** | | | **100.00%** | **407.51%** | **54.68%** |

*Table 3.1.1 Expenditure summary by route number*

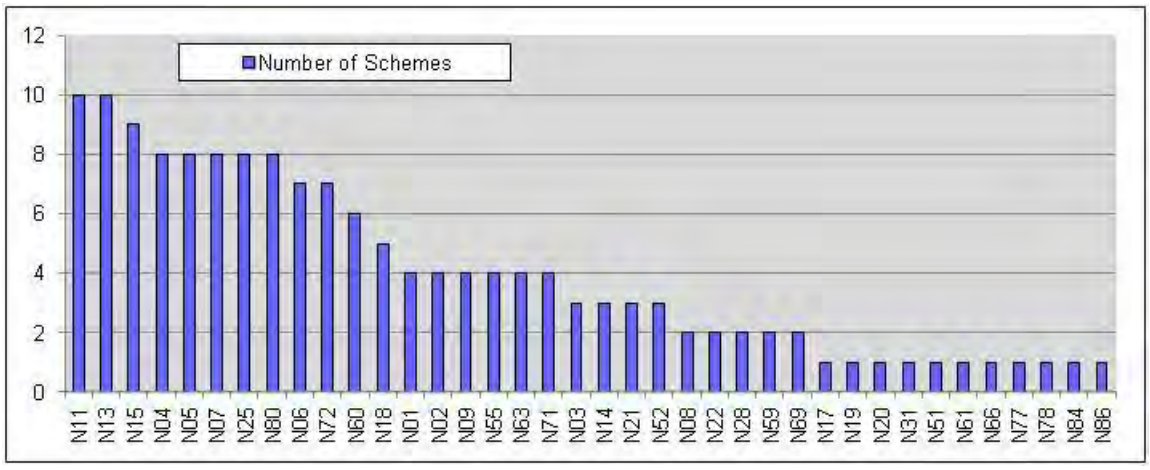
The following charts show the expenditure, average cost per scheme per national route and numbers of schemes completed on each route.




*Graph 3.1.1 Total approved cost and % of overall expenditure by national route*



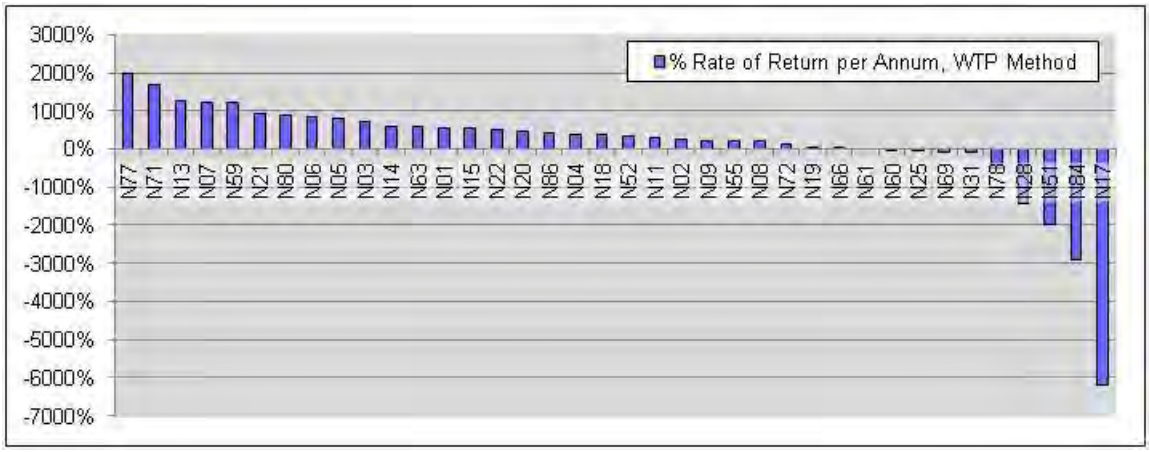

*Graph 3.1.2 Average cost of schemes by national route*



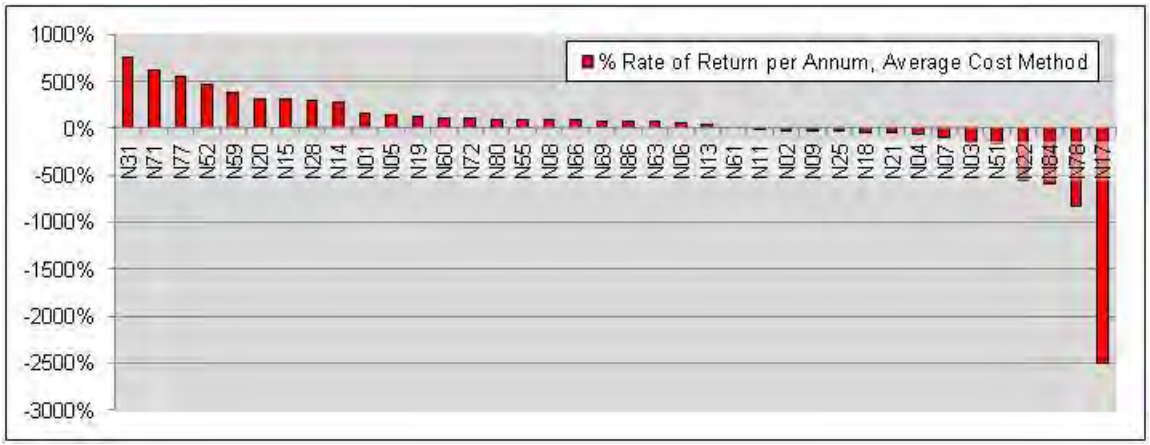

*Graph 3.1.3 Numbers of schemes per national route*

## 3.2. Rates of Return per National Route

The following two charts show the rates of return achieved for the groups of schemes on each of the National Roads.




*Graph 3.2.1 National route RoR by WTP method*




*Graph 3.2.2 National route RoR by AC method*

Comparison of these two charts reflects the overall results evident within this examination of Programme II. In particular the difference in results achieved using the WTP method and the AC method. This difference is highlighted by the higher number of routes that return a positive RoR in the WTP method as compared to the AC Method. However, the real difference is in the scale of the two graphs above.

The WTP graph ranges between 2000 and –6000%, a range of 8000% while the AC graph ranges between 750 and –2500%, a range of 3250%. Closer examination of these results show that the N17 result at –6000% and –2500% are based on a single site at a cost of IR£7,000 and are primarily due to a single fatal accident in the after period. This single site distorts the overall range of both graphs disproportionately.

More useful results are obtained when examining routes that have a number of schemes. The N13 for example had ten schemes at a total cost of IR£108K. It appears to have a relatively low RoR at just 42.9% per annum by the AC Method. In fact the rate of return is 1261% by the WTP Method or more importantly, crashes on this road were reduced from 8 fatal, 22 serious and 26 minor accidents in 7 years to 0 fatal, 1 serious and 23 minor in 3.2 years.

Again, the two examples above indicate the need to examine routes and sites carefully to identify treatable sites. In deciding what is treatable it is important to first identify the exact problem or difficulty road-users are having and then to decide how to alleviate it. Often the best solution is to tell drivers what the problem is and to advise them accordingly. Of the ten schemes on the N13, eight are primarily signing and/or lining schemes.

## 3.3. National Primary V's National Secondary Routes

Of the 151 schemes completed under this programme 104 were on National Primary Routes and the remaining 47 on National Secondary Routes.

The total expenditure, average cost and number of schemes in each category is detailed below.

| | **National Primary** | **National Secondary** |
|---|---|---|
| **Value** | IR£1,339,000 | IR£492,500 |
| **Average Cost** | IR£12,875 | IR£10,479 |
| **No. of Schemes** | 104 | 47 |

| **National Secondary Roads** | **Total Numbers After** | **Ave Per Annum After** | **Total Savings** |
|---|---|---|---|
| Total Years After | 3.17 | | |
| Fatal After | 4 | 1.26 | 2.42 |
| Serious Injury After | 13 | 4.10 | 3.39 |
| Minor Injury After | 37 | 11.67 | 13.28 |
| Total Injury Accidents After | 57 | 17.98 | 26.10 |
| After Costs by WTP method per annum | IR£5.30M | IR£1.74M | IR£4.08M |
| After Costs by AC method per annum | IR£4.20M | IR£1.32M | IR£2.12M |
| **Savings % per annum, WTP** | **261%** | | |
| **Savings % per annum, AC** | **136%** | | |

*Table 3.3.1 National Secondary Roads after history*

| National Primary Roads | Total Numbers After | Ave Per Annum After | Total Savings |
|---|---|---|---|
| Total Years After | 3.10 | | |
| Fatal After | 10 | 3.23 | 15.78 |
| Serious Injury After | 56 | 18.09 | 29.82 |
| Minor Injury After | 202 | 65.24 | -36.37 |
| Total Injury Accidents After | 268 | 86.56 | 9.58 |
| After Costs by WTP method per annum | IR£16.64M | IR£5.37M | IR£19.13M |
| After Costs by AC method per annum | IR£19.73M | IR£6.37M | IR£1.03M |
| **Savings % per annum, WTP** | **461%** | | |
| **Savings % per annum, AC** | **25%** | | |

*Table 3.3.2 National Primary Roads after history*

There is an important result evident within this particular part of the analysis of the after history of the accidents. In all the analysis to date there has been an overall success rate of 40% RoR per annum. However, the analysis of the primary routes indicates that the schemes on the national primary routes did not attain the required 40% RoR when analysed under the AC Method, achieving only 24%. By contrast, the same group of schemes indicate a saving of tenfold that required when analysed using the WTP method (461%).

This apparent anomaly is explained by the saving in fatal and serious accidents although there is an increase in the numbers of minor accidents.

The savings in fatal and serious accidents on national secondary routes are much lower but there is also a saving in the numbers of minor accidents resulting in an excellent return under the AC Method and a good return by the WTP method.

Some counties did not apply for funding under this programme for the national secondary routes due to a misunderstanding by which they did not realise these routes were included in the programme. Others decided not to apply for funding preferring to concentrate on schemes on the national primary routes. Most counties have started to complete schemes on national secondary routes under Programme III.

# 4. Results by Solution Types

## 4.1. Defining Solutions

The solutions applied to the individual schemes would have involved two or more different measures in most cases. The most common combination would be lining and signing. In many cases where road markings or lining were applied the road would also have been surface dressed to provide a suitable surface for the lining.

For the purposes of this assessment an additional column was added to the database to indicate the primary solution being applied to the problem. In the tables this is called the "Short Solution Description" and is the basis of the analysis of the schemes by solution type. Some difficulty was experienced in classifying the solution based on the application forms used in preparing the database. However, the final assessment is a fair reflection of the schemes although there may be some element of debate regarding the classification of some of the schemes.

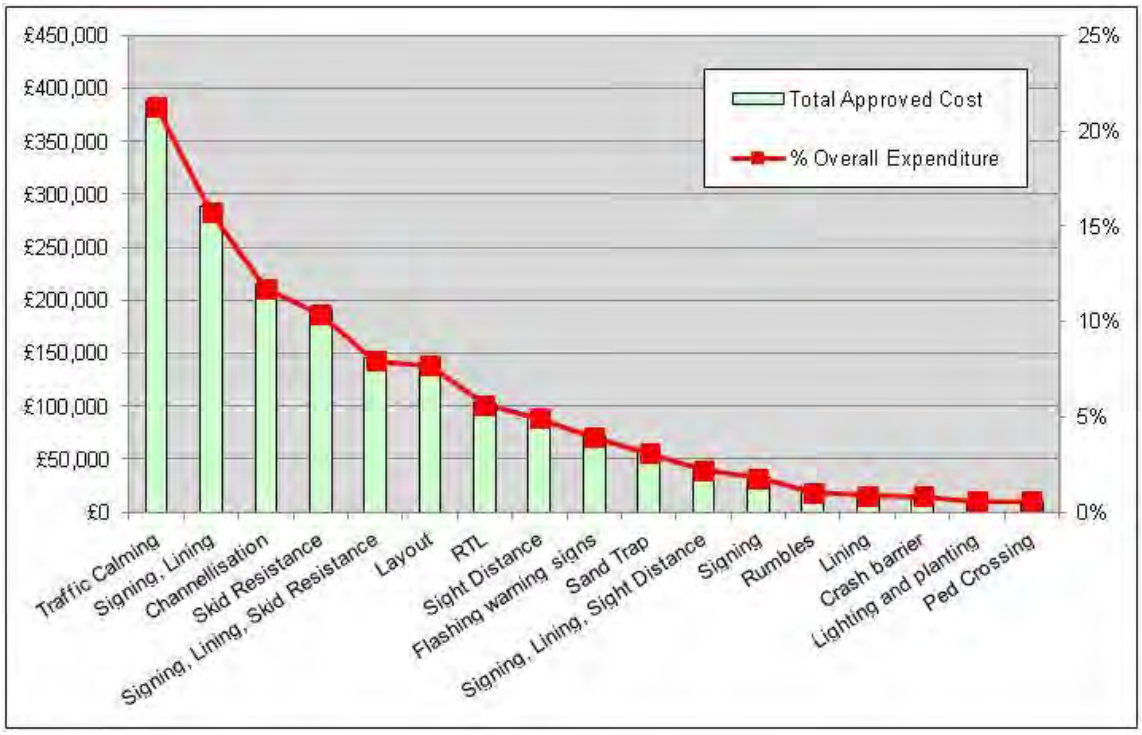
It is possible that some schemes were not implemented as proposed, resulting in the classification being different to that described in this report. Again, as with the accident histories, details of those differences may be forwarded to the NRA to amend the assessment for future reference.

## 4.2. Expenditure per Solution Type

The table and chart below show the summary of solutions sorted by overall expenditure by solution type.

| Short Solution Description | No of Schemes | Total Approved Cost IR£ | Average Cost per Scheme IR£ | % Overall Expenditure | % Rate of Return per Annum, WTP Method | % Rate of Return Per Annum, AC Method |
|---|---|---|---|---|---|---|
| Traffic Calming | 17 | 388,700 | 22,865 | 21.22% | 458.05% | 97.16% |
| Signing, Lining | 40 | 288,000 | 7,200 | 15.72% | 237.14% | -37.05% |
| Channellisation | 16 | 215,350 | 13,459 | 11.76% | 780.69% | 159.64% |
| Skid Resistance | 3 | 190,000 | 63,333 | 10.37% | 88.75% | -39.64% |
| Signing, Lining, Skid Resistance | 11 | 145,500 | 13,227 | 7.94% | 197.70% | 128.56% |
| Layout | 8 | 141,000 | 17,625 | 7.70% | 300.07% | 116.49% |
| RTL | 10 | 103,500 | 10,350 | 5.65% | 359.40% | 30.32% |
| Sight Distance | 7 | 90,000 | 12,857 | 4.91% | -188.19% | 13.95% |
| Flashing warning signs | 7 | 71,500 | 10,214 | 3.90% | 119.38% | -26.04% |
| Sand Trap | 1 | 56,000 | 56,000 | 3.06% | 6.53% | 44.84% |
| Signing, Lining, Sight Distance | 5 | 40,000 | 8,000 | 2.18% | 729.43% | 322.22% |
| Signing | 13 | 32,200 | 2,477 | 1.76% | 2639.32% | 328.80% |
| Rumbles | 4 | 18,500 | 4,625 | 1.01% | 1498.59% | -135.72% |
| Lining | 4 | 16,000 | 4,000 | 0.87% | 3582.52% | -274.62% |
| Crash barrier | 2 | 14,750 | 7,375 | 0.81% | -1485.42% | -191.50% |
| Lighting, planting | 1 | 10,500 | 10,500 | 0.57% | 3457.50% | -107.61% |
| Ped Crossing | 2 | 10,000 | 5,000 | 0.55% | 119.68% | -659.09% |

*Table 4.2.1 Expenditure summary per solution type*




*Graph 4.2.1 Total approved cost and % of overall expenditure per solution type*

From the above table and chart it can be seen that 48% of the expenditure was spent on just 3 of the solution types, Traffic Calming, Signing and Lining and Channellisation. Basically all three of these solutions comprise road markings and some signage. The difference between channellisation and traffic calming is in the detail. If the solution included signage indicating there was traffic calming, the scheme is classified as such.

However, these schemes do not include the schemes for which funding was provided to from the NRA's Traffic Calming programme and which are recognisable by the traffic calming gateway signs.

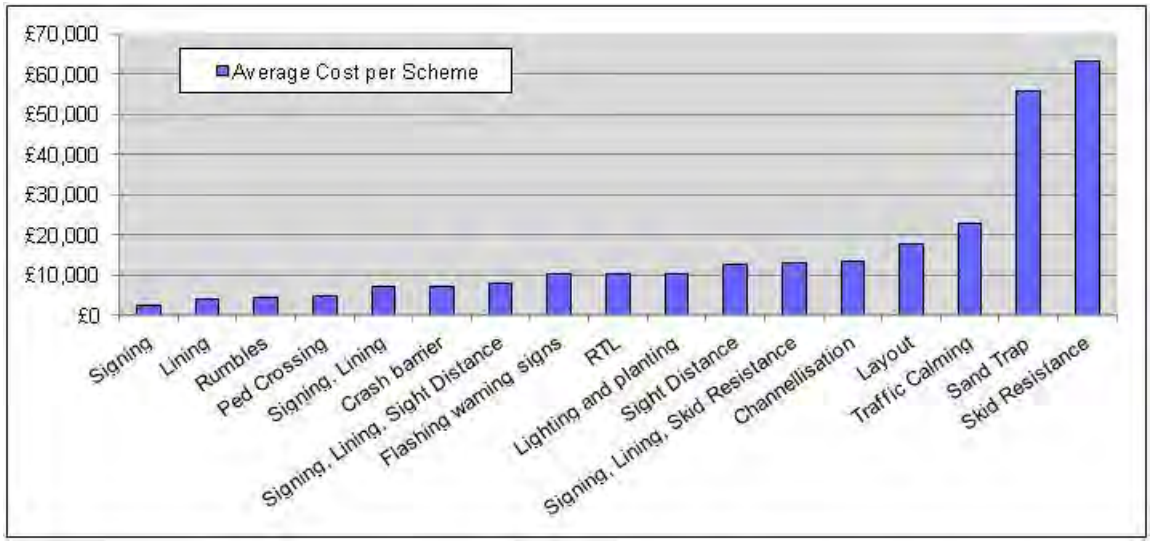
The above chart and table indicates how the money was spent but as in the other cases the schemes were analysed to examine how well it was spent. Some of the solutions such as the sand trap (or arrester bed to give it its' proper title) are rare and for that reason the evaluation may not indicate the proper return from such schemes had a number of them been completed and been available for a comparative assessment. However, the returns as indicated may hopefully be a guide to the possible use or not of such schemes in the future.

Some of the solutions such as the Lining and Signing were used repeatedly. The RoR for those individual schemes can also be used to examine the schemes which produced good results, compared to those which did not. Hopefully, by further examination of the less successful schemes, lessons may be learnt for the future.

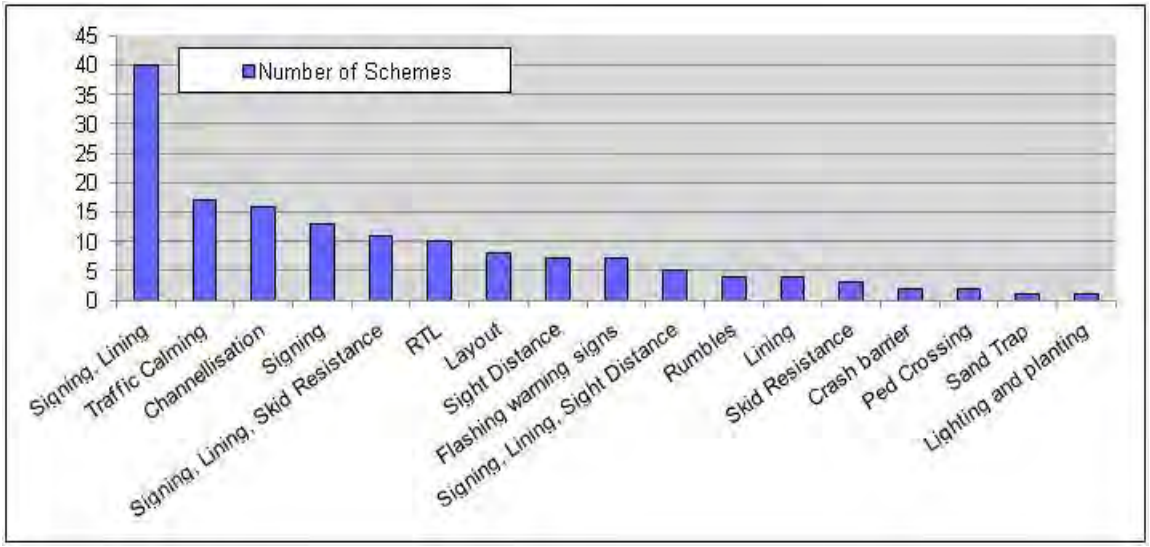
## 4.3. Average Cost per Solution

The tables below show the number of solutions per solution type and the average cost of the solutions. Signing and Lining the most common, at 40, followed by Traffic Calming and Channellisation.

Signing, Lining and Rumble schemes had the lowest expenditure per scheme. The Skid Resistance, Sand Trap and Traffic Calming schemes were the most expensive.




*Graph 4.3.1 Average cost of schemes by solution type*

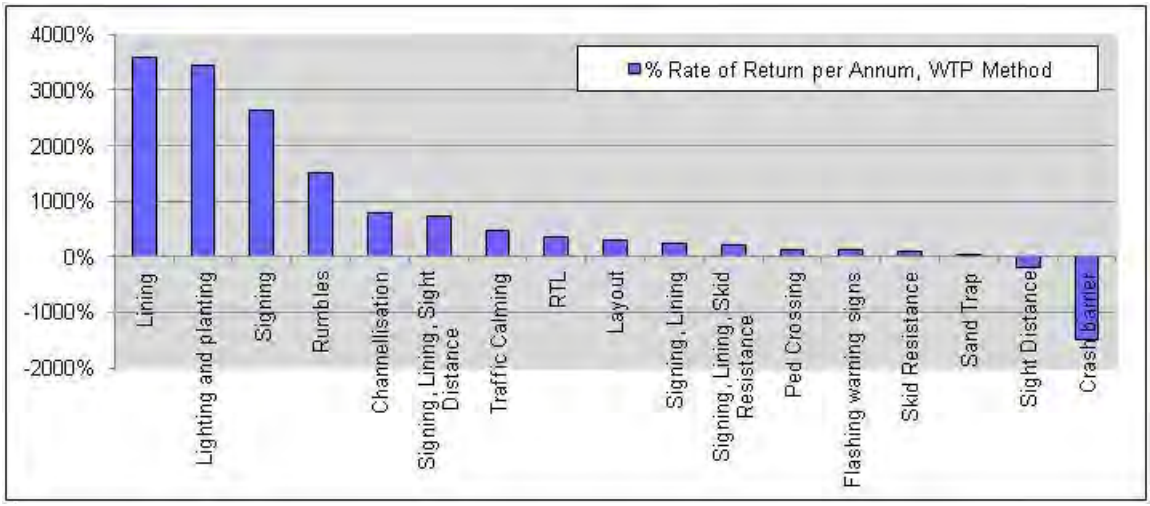



*Graph 4.3.2 Number of schemes per solution type*

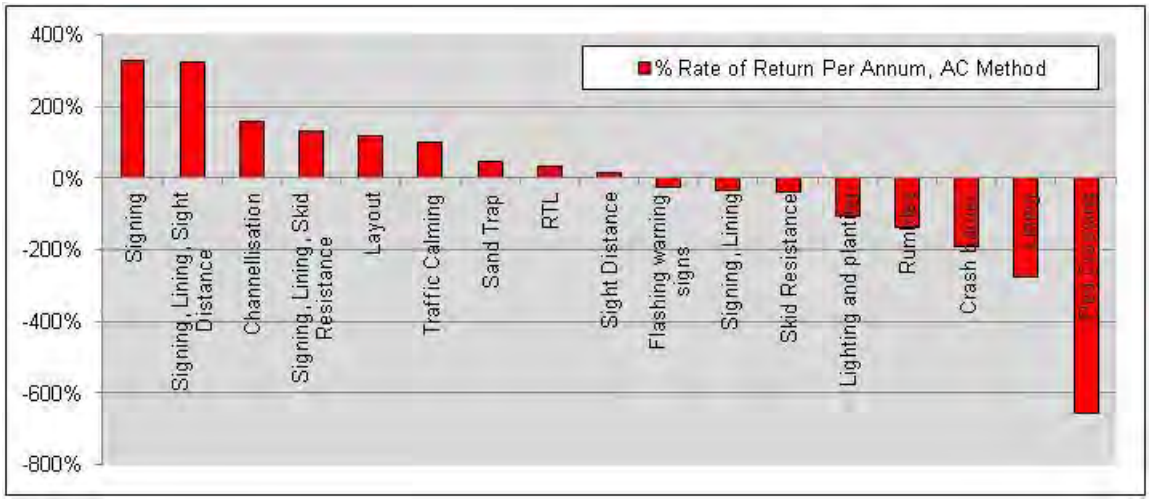
## 4.4. Rate of Return per Solution Type

The cost is not the most important element in the assessment of these schemes. The accident numbers and especially their types in the before and after period greatly affect the apparent success or failure of schemes or groups of schemes. The following charts show the RoR for the solutions by the AC Method and by the WTP Method.

The profile of these two graphs is significantly different and reflects the positive rate of return when analysing schemes by the WTP Method. All the solutions, except the Sand Trap, Sight Distance and Crash Barrier schemes project positive rates of return using the WTP method. These differences indicate the reduction in the severity of the accidents even in cases where there is an increase in the numbers of accidents. However, roughly half the schemes indicate negative returns using the AC method. A negative RoR indicates an increase in accident numbers but does not take account of the reduction in severity.




*Graph 4.4.1 Solution type RoR by WTP method*




*Graph 4.4.2 Solution type per Annum by Ac method*

Some significant points evident from these two charts are the apparent ineffectiveness of either crash barriers or pedestrian crossings when analysed using either method. However, there were only two solutions listed for each case so no firm conclusions should be drawn.

Another point of interest is the difference in the effectiveness of lining schemes by either method. It would appear from the above charts that lining on its own is not very effective in preventing accidents but that it does reduce the severity of accidents. On the other hand signing does reduce both the number of accidents and severity of accidents. Channellisation, Traffic Calming and Sight Distance improvements also yield good results by either method.


A surprising result appears to be the Signing and Lining schemes. By the WTP method they give a very good RoR (230%) but by the AC method there is a slight increase in accidents.

Overall however, the results from the above analysis seem to show that signing and lining schemes and combinations of such schemes do give fairly good rates of return. In short, if drivers are aware of what might lie ahead they do tend to compensate for deficiencies in the road geometry.

# 5. Primary Collision Type

## 5.1. The Nature of Accidents and Relevant Treatment

By their nature some accidents type are more amenable to treatment by accident remedial measures. All the schemes were evaluated by reference to the primary collision indicated for the schemes. For schemes where it is evident that there is one particular accident type occurring it is easier to identify a particular solution because the remedial measure can focus precisely on that collision type.

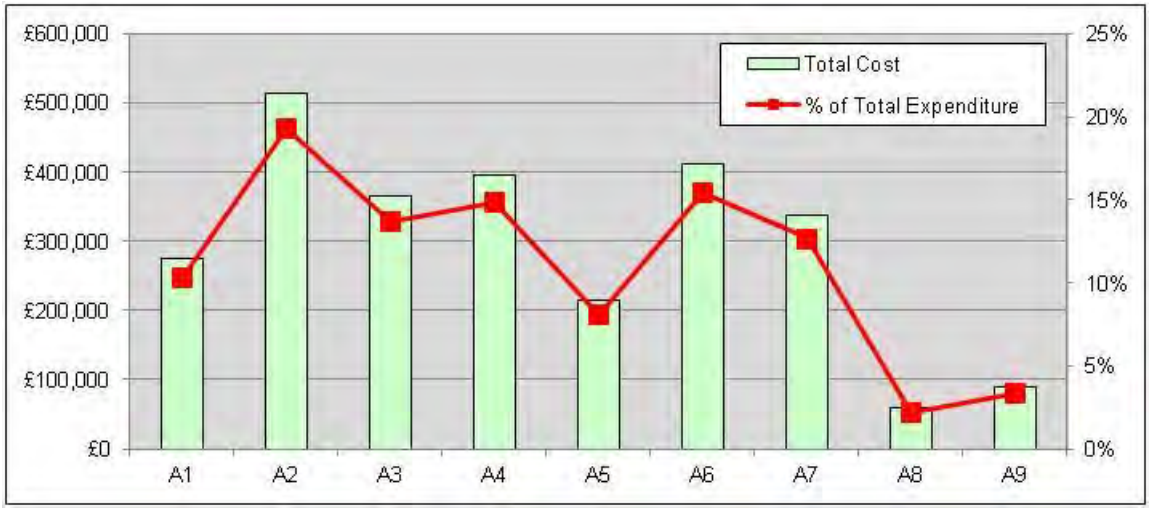
When considering the proposed solution in such instances, care should be taken that the solution itself does not create an alternative hazard, which may result in a different hazard or accident type. Typical examples might be the creation of visual obstructions by new signs or extended overtaking restrictions that might lead to frustration of drivers resulting in unnecessarily bad decisions.

Some of the chevron schemes did create such visual obstructions at private entrances. This was remedied by moving the signs a short distance. In some cases where overtaking restrictions were installed, advance warning signs indicating the length of the restriction were also erected to help reduce driver frustration.

## 5.2. Expenditure by Primary Collision Type

The chart below shows the expenditure per primary collision type. From the chart it can be seen that approximately 20% of the funding targeted single vehicle accidents, the largest target group. In view of the relatively poor results achieved, some consideration should be given to examining these locations further to see if the correct solutions are being applied, if they are being implemented correctly or if alternative solutions should be considered.

Possibly, the best method to do that may be to examine those sites within the group, which appeared to perform well, and to compare the solutions and their applications to those sites which did not achieve the reduction targets assumed.




*Graph 5.2.1 Total approved cost and % of overall expenditure by primary collision type*

## 5.3. Summary of Results for Primary Collision Types

*Note: In examining the schemes, all sites that indicated a particular accident type were evaluated as a group. Because so many sites included a number of primary collision types, those schemes were examined in the group of schemes for each of the collision type. For that reason the total number of accident types is 220 for the 151 schemes. Likewise the total expenditure appears to be IR£2.66M. As both the number of schemes and the cost is increased the resulting savings per collision type are reasonable.*

| Acc Type | Acc Description | No. of Acc Type | Total Cost IR£ | % of Total Expend. | Ave Cost | Fatal Acc Saved After | Serious Acc Saved After | Minor Acc Saved After | Total Injury Acc Saved After | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | Pedestrian | 24 | 275,300 | 10.34% | 11,471 | 5.46 | 5.55 | -0.95 | 10.06 | 732% | 127% |
| A2 | Single Vehicle | 39 | 514,850 | 19.33% | 13,201 | -0.03 | 9.55 | -10.69 | -1.16 | 83% | -5% |
| A3 | Head-on (Overtaking) | 34 | 365,050 | 13.71% | 10,737 | 1.63 | 9.64 | -1.49 | 9.78 | 225% | 39% |
| A4 | Sideswipe,Rt turning in (Incl Overtaking) | 34 | 395,850 | 14.86% | 11,643 | 5.80 | 12.76 | -5.93 | 12.63 | 555% | 76% |
| A5 | Sideswipe (Incl O/Taking) | 14 | 215,400 | 8.09% | 15,386 | 4.04 | 10.07 | -5.05 | 9.43 | 765% | 127% |
| A6 | Rear End | 40 | 411,050 | 15.43% | 10,276 | 8.39 | 22.15 | -9.07 | 21.47 | 769% | 106% |
| A7 | Mixed | 22 | 338,000 | 12.69% | 15,364 | 5.39 | 6.36 | -4.33 | 7.42 | 651% | 87% |
| A8 | Conflict Warrant | 10 | 59,000 | 2.22% | 5,900 | 0.34 | -0.62 | -2.28 | -2.56 | 120% | -83% |
| A9 | Overshoot | 3 | 89,000 | 3.34% | 29,667 | 0.43 | 1.14 | -1.29 | 0.29 | 134% | -38% |

*Table 5.3.1 Expenditure and returns per primary collision type*

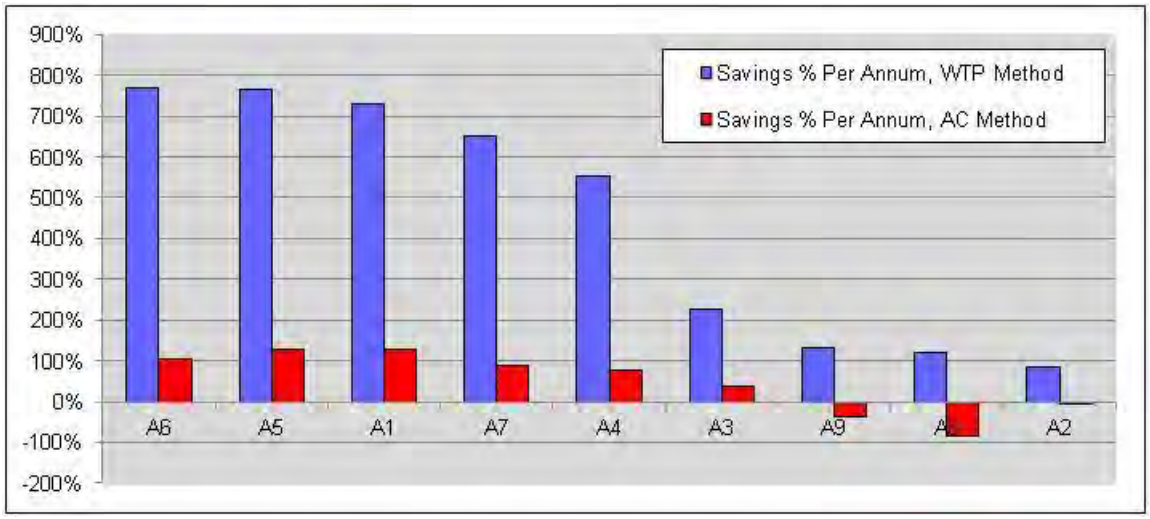
A study of the table above reveals that solutions targeted at turning accidents and pedestrian accidents tend to be effective. Solutions targeting single vehicle accidents are surprisingly poor. By the WTP method they appear to be satisfactory (82.9%) but by the AC method (-4.8%) they are not. As in other cases this would indicate the severity of the accidents is reduced but the numbers of accidents is almost the same.

The poor results obtained for the Conflict Warrant accidents reflect the fact that there was a perceived accident problem as opposed to an actual accident history.

The good results achieved for sites that indicated pedestrian collisions arise from the relative severity of pedestrian accidents due to the vulnerability of pedestrians.

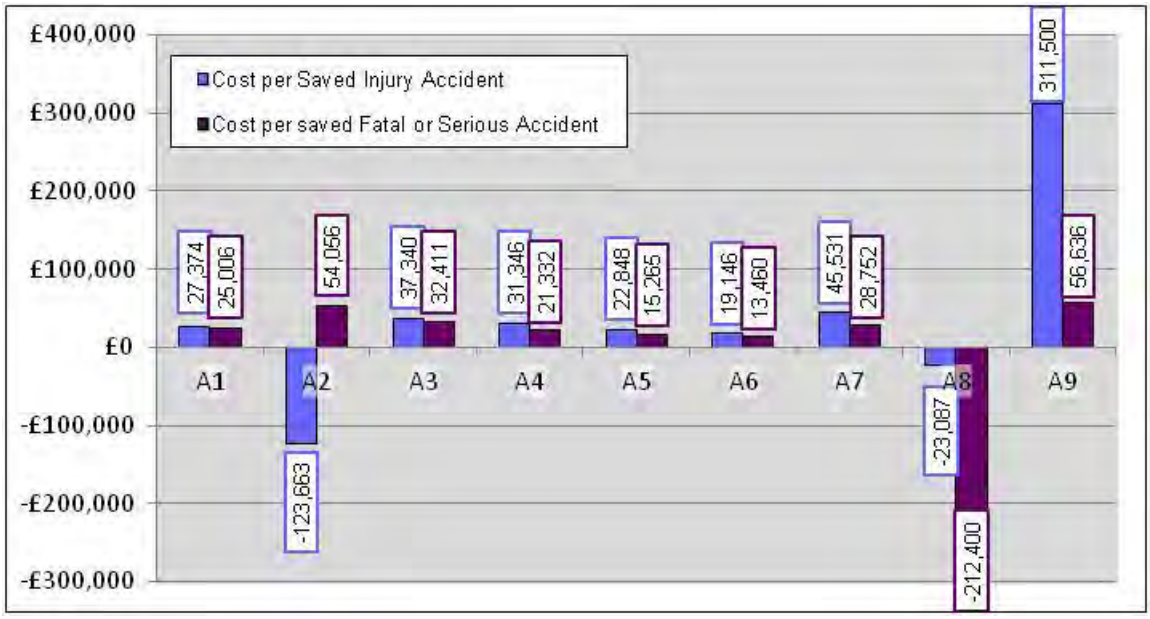
## 5.4. What Collisions Respond Best to ARM?

From both Table 5.3.1 above and the charts below, Primary Collision types 1, 4, 5 and 6 respond well to accident remedial measures. Type 7 is classified as mixed accidents and appears to perform well but without re-examining these locations the information is not sufficiently specific to make a comment on them.




*Graph 5.4.1 FYRR for WTP method and AC method by primary collision type*

The above chart graphically illustrates the difference in FYRR by the two comparable methods for evaluating schemes. However, the notion of FYRR is still a vague concept. To clarify the results into a more direct relationship the table below shows the average cost of preventing one accident of each collision type.




*Graph 5.4.2 Cost per accident 'saved'*

## 5.5. Single Vehicle Accidents

Single vehicle (SV) collisions merit a special mention in relation to this analysis. Initially, it would appear that SV collisions would be among the simplest to treat. The assumptions might appear to be that loss of control accidents on bends could be reduced through better signing and lining or that improving the layout at deceptive junctions and road sections might help the driver to anticipate the road ahead more easily.

In some cases that would appear to be the case and there appears to be some reduction in the severity of some of the SV collisions, however for such a large and varied group of crashes the overall results appear poor. Apart from the perceived accident problem cases, the group of schemes directed at SV collisions is the only target group to exhibit an increase in accident numbers. Although there was a fairly good reduction in the number of serious injury accidents there was a negligible reduction in fatal accidents and a large increase in the numbers of minor injury accidents.

The change in accidents is reflected in the figure that indicates the cost of saving Fatal and Serious injury accidents indicated in Graph 5.4.2 above.

The main improvement in relation to these crashes is in the reduction of serious injury accidents to minor injuries. This may be because the altered lining or signing is encouraging some drivers to slow down just enough to reduce the severity of the crashes but not their occurrence. Generally, however, the returns for these collisions are poor.

Analysis of the NRA's accidents database from 1996 to 2001 shows that 48% of all accidents are Pedestrian, Single Vehicle or Head-on, however, these three primary collision types represent 80% of fatal accidents and 63% of serious injury accidents.

| Acc Type | Acc Description | No. of Accidents | % of Accidents | No. of Fatal Accidents | % of Fatal Accidents | No. of Serious Accidents | % of Serious Accidents | No. of Minor Accidents | % of Mino Accidents |
|---|---|---|---|---|---|---|---|---|---|
| A1 | Pedestrian | 8533 | 18% | 617 | 26% | 1,463 | 18% | 6453 | 17% |
| A2 | Single Vehicle | 8422 | 18% | 753 | 32% | 2,015 | 25% | 5654 | 15% |
| A3 | Head-on (Overtaking) | 6169 | 13% | 494 | 21% | 1,624 | 20% | 4051 | 11% |
| A4 | Sideswipe,Rt turning in (Incl Overtaking) | 3051 | 6% | 59 | 3% | 470 | 6% | 2522 | 7% |
| A5 | Sideswipe (Incl O/Taking) | 2697 | 6% | 71 | 3% | 397 | 5% | 2229 | 6% |
| A6 | Rear End | 2855 | 6% | 37 | 2% | 365 | 5% | 2453 | 7% |
| A7 | Mixed | 5647 | 12% | 72 | 3% | 472 | 6% | 5103 | 14% |
| A8 | Conflict Warrant | 1301 | 3% | 26 | 1% | 167 | 2% | 1108 | 3% |
| A9 | Overshoot | 380 | 1% | 3 | 0% | 20 | 0% | 357 | 1% |
| A10 | Other (Incl unspecified) | 8817 | 18% | 209 | 9% | 1071 | 1% | 7537 | 20% |
| | Total Injury Accidents 1996-2001 | 47872 | | 2341 | | 8064 | | 37467 | |
| | % of A1 to A3 Accidents by Severity | | 48% | | 80% | | 63% | | 43% |

*Table 5.5.1 Accidents summary 1996 to 2001*

The above table would suggest the emphasis for accident remedial schemes should be towards pedestrian safety and reducing single vehicle and head-on collisions. The schemes have been relatively successful in relation to pedestrian accidents and head-on conflicts but the poor performance in relation to single vehicle crashes is unfortunate especially in view on the fact that single vehicle crashes represent 18% of all accidents and 32% of all fatal accidents and a further 25% of all serious injury accidents.

On the basis of this assessment and the number and severity of single vehicle crashes there is a case for studying these incidents in detail to identify, if possible, the underlining reason for them, and to develop measures, possibly outside the scope of these programmes, to reduce these crashes.

# 6. Best and Worst

## 6.1. Best Schemes

Table 1.3.1 in Chapter One of this report presented an overall summary of the RoR for the schemes completed under Programme II. This section of the report will review the 20 most successful and the 20 least effective locations completed in 1996 and 1997 using both methods of evaluation.

**Best Schemes by AC Method**

These 20 schemes cost €69,050 or an average of €3,452.5 each.

| Local Authority | Description | Route No. | Approved Cost |
|---|---|---|---|
| Cork South | Blacksticks | N71 | IR£5,000 |
| Cork South | Pedlar's Cross | N71 | IR£5,000 |
| Donegal | Ballybulgan | N15 | IR£600 |
| Donegal | Dry Arch RaB | N13 | IR£10,000 |
| Donegal | Galdonagh Jn. | N14 | IR£1,000 |
| Donegal | Junctions at 0219 and 0186 | N13 | IR£500 |
| Donegal | Trenamullin | N15 | IR£1,200 |
| DunLaoghaire/Rathdown | Johnstown Road Jn. | N11 | IR£1,500 |
| DunLaoghaire/Rathdown | Mount Merrion Ave. | N31 | IR£5,500 |
| DunLaoghaire/Rathdown | Wyattville Dual Carriageway | N11 | IR£2,000 |
| Laois | Ballickmoyler | N80 | IR£3,000 |
| Laois | Cloonaghadoo 2 | N80 | IR£2,000 |
| Longford | Dublin Road Edgeworthstown | N04 | IR£6,000 |
| Mayo | Ballyvary | N05 | IR£10,000 |
| Meath | Colpe Cross | N01 | IR£3,000 |
| Meath | Mosney Jn. | N01 | IR£4,750 |
| Roscommon | Drum Jn. | N06 | IR£2,000 |
| Waterford | Clearys Cross Jn. | N25 | IR£2,000 |
| Waterford | Piltown Cross Jn. | N25 | IR£2,000 |
| Wicklow | Dublin Road Arklow | N11 | IR£2,000 |

*Table 6.1.1 Best 20 sites by AC method*

**Best 20 Schemes by WTP Method**

These 20 schemes cost €65,300 or an average of €3,265 each.

| Local Authority | Description | Route No. | Approved Cost |
|---|---|---|---|
| Carlow | Greenlane | N09 | IR£5,000 |
| Cork South | Pedlar's Cross | N71 | IR£5,000* |
| Donegal | Ballybofey, Main St. | N13 | IR£1,000 |
| Donegal | Ballybulgan | N15 | IR£600* |
| Donegal | Griannan Jn. | N13 | IR£500 |
| Donegal | Junctions at 0219 and 0186 | N13 | IR£500* |
| Donegal | Kilross | N13 | IR£5,000 |
| Donegal | Manor Jn. | N13 | IR£10,500 |
| Donegal | Trenamullin | N15 | IR£1,200* |
| DunLaoghaire/ Rathdown | Clonkeen Road Jn. | N11 | IR£1,500 |
| Galway | Fureys Cross | N06 | IR£5,000 |
| Kerry | Raleigh | N71 | IR£2,500 |
| Laois | Cloonaghadoo 2 | N80 | IR£2,000* |
| Laois | Jamestown Jn. | N07 | IR£6,000 |
| Laois | Sluggarey | N07 | IR£4,000 |
| Meath | Ross Cross | N03 | IR£4,000 |
| Roscommon | Abbey N.S.Roscommon | N63 | IR£5,000 |
| Roscommon | Drum Jn. | N06 | IR£2,000* |
| Westmeath | Ballykeeran | N55 | IR£2,000 |
| Wicklow | Dublin Road Arklow | N11 | IR£2,000* |

*Table 6.1.2 Best 20 sites by WTP method*

## 6.2. Savings

| Best 20 Sites AC Method | Totals Before | Ave Per Annum Before | |
|---|---|---|---|
| Total Years, Before | 8.85 | | |
| Fatal, Before | 12 | 1.36 | |
| Serious Injury, Before | 38 | 4.29 | |
| Minor Injury, Before | 87 | 9.83 | |
| Total Injury Accidents Before | 137 | 15.48 | |
| Material | 41 | 4.63 | |
| Total Accidents | 178 | 20.11 | |
| Accident Cost, WTP | IR£ 17,436,946 | IR£ 1,970,276 | |
| Accident Cost, AC | IR£ 10,421,591 | IR£ 1,177,581 | |
| | **Totals After** | **Ave Per Annum After** | **Total Saving** |
| Total Years After | 3.1 | | |
| Fatal After | 1 | 0.32 | **3.20** |
| Serious Injury, After | 8 | 2.58 | **5.31** |
| Minor Injury, After | 11 | 3.55 | **19.47** |
| Total Injury Accidents After | 20 | 6.45 | **27.99** |
| Total Accidents | 21 | 6.77 | **41.35** |
| After Accident Cost, WTP | IR£ 1,629,947 | IR£ 525,789 | **IR£ 4,477,910** |
| After Accident Cost, AC | IR£ 1,318,586 | IR£ 445,673 | **IR£ 2,268,915** |
| **First Year RoR %, WTP** | | **2092%** | **6485%** |
| **First Year RoR %, AC** | | **1060%** | **3286%** |

*Table 6.2.1 Savings. Best 20 sites by AC method*

| Best 20 Sites WTP Method | Totals Before | Ave Per Annum Before | |
|---|---|---|---|
| Total Years, Before | 8.15 | | |
| Fatal, Before | 30 | 3.68 | |
| Serious Injury, Before | 46 | 5.64 | |
| Minor Injury, Before | 75 | 9.20 | |
| Total Injury Accidents Before | 151 | 18.53 | |
| Material | 89 | 10.92 | |
| Total Accidents | 240 | 29.45 | |
| Accident Cost, WTP | IR£ 33,683,520 | IR£ 4,132.947 | |
| Accident Cost, AC | IR£ 11,219,001 | IR£ 1,376,564 | |
| | **Totals After** | **Ave Per Annum After** | **Total Saving** |
| Total Years After | 3.25 | | |
| Fatal After | 1 | 0.31 | **10.96** |
| Serious Injury, After | 9 | 2.77 | **9.34** |
| Minor Injury, After | 49 | 15.08 | **-19.09** |
| Total Injury Acc After | 59 | 18.15 | **1.21** |
| Total Accidents | 63 | 19.38 | **32.71** |
| After Accident Cost, WTP | IR£ 2,585,865 | IR£ 795,651 | **IR£ 10,846,213** |
| After Accident Cost, AC | IR£ 4,426,913 | IR£ 1,362,127 | **IR£ 46,921** |
| **First Year RoR %, WTP** | | **5111%** | **16610%** |
| **First Year RoR %, AC** | | **22%** | **72%** |

*Table 6.2.2 Savings. Best 20 sites by WTP method*

There are 7 schemes that appear in both sets of data above. These 7 schemes represent the best returns for both methods of evaluation. Most of the schemes are relatively cheap. The 3 cheapest schemes, all in Donegal, were signing schemes only. Two of those schemes, Trenamullin and Ballybulgan involved the erection of single post chevrons on bends only. The third involved the erection of a new advance stop sign on the approach to two different concealed junctions on the N13.

The main feature the most successful schemes appear to have in common is a clearly definable problem with an equally clear solution.

With many of the applications that are received, this is not the case. More typically there is an accident problem but the reason for the problem is not easily identified or alternatively, in many cases the main problem may not be a deficiency in the road but it is assumed locally, often wrongly, that alterations to the road or road furniture may alleviate the problem.

In evaluating the schemes, the initial cost and the accident history are the only two factors that determine the success of a scheme. Obviously, the cheaper the scheme the more likely that the returns will be good, however, regardless of cost, there has to be an improvement in the accident history for a scheme to be considered successful i.e. to show a return of at least 40% on the FYRR. On that basis, it is significant that the average cost of the most successful schemes by either method of evaluation is approximately IR£3,500. This is even more significant in the case of the WTP method in which the reduction of fatal accidents is the dominant factor is determining the success of a scheme. Table 6.2.2 shows the ten most successful schemes by the WTP method accounted for 30 fatal accidents in the before period and just 1 in the after period.

By comparison, the 20 best schemes by the AC method accounted for 12 fatal accidents in the before period and also for 1 in the after period. However, they also accounted for savings in serious and minor injury accidents. See Table 6.2.1.

## 6.3. Worst Schemes

The following tables list the worst performing schemes by the Average Cost and the WTP Method and the summaries of the savings (or not) in accidents and returns for the expenditure incurred.

**Worst 20 Schemes by Ac Method**

These 20 schemes cost €118,150 or an average of €5,370.45 each.

| Local Authority | Description | Route No. | Approved Cost |
|---|---|---|---|
| Carlow | Wallsforge | N80 | IR£5,000 |
| Donegal | Ballybofey, Main St. | N13 | IR£1,000 |
| Donegal | Bridgend | N13 | IR£800 |
| Donegal | Finner Rd. Bundoran | N15 | IR£7,600 |
| DunLaoghaire/Rathdown | Booterstown Avenue Jn. | N11 | IR£3,500 |
| DunLaoghaire/Rathdown | Clonkeen Road Jn. | N11 | IR£1,500 |
| DunLaoghaire/Rathdown | Loughlinstown Roundabout | N11 | IR£7,500 |
| Galway | Knockdoe | N17 | IR£5,000 |
| Galway | Weir Rd. Kilcolgan | N18 | IR£5,000 |
| Kerry | Leamnaguilla | N22 | IR£1,000 |
| Laois | Newtown Cross | N78 | IR£3,000 |
| Longford | Lissardowlan | N04 | IR£2,500 |
| Longford | Newtownforbes Village | N04 | IR£10,000 |
| Mayo | Ballyhean | N84 | IR£10,000 |
| Meath | Ross Cross | N03 | IR£4,000 |
| Meath | Slane Bridge | N02 | IR£7,250 |
| Tipperary (N.R.) | Jn. at Ballywilliam Stores | N07 | IR£2,500 |
| Tipperary (N.R.) | Kilmastulla, R496 Jn. | N07 | IR£7,000 |
| Waterford | Stone Bridge | N25 | IR£11,000 |
| Westmeath | Ballykeeran | N55 | IR£2,000 |
| Westmeath | The Vee of the Downs, Killucan Road and crossroads | N04 | IR£15,000 |
| Westmeath | Fardrum Jn. and additional | N06/N62 | IR£6,000 |

*Table 6.3.1 Worst 20 schemes by AC method*

**Worst 20 Schemes by WTP Method**

These 20 schemes cost €143,150 or an average of €7,157.5 each.

| Local Authority | Description | Route No. | Approved Cost |
|---|---|---|---|
| Cork South | Met-Con Jn. | N28 | IR£10,000 |
| Donegal | Bridgend | N13 | IR£800* |
| Donegal | Finner Rd. Bundoran | N15 | IR£7,600* |
| Galway | Knockdoe | N17 | IR£5,000* |
| Laois | Newtown Cross | N78 | IR£3,000* |
| Limerick | Fennessey's Bend | N69 | IR£10,000 |
| Longford | Aghnaskea (Killashee Village) | N63 | IR£1,500 |
| Louth | Sheepgrange Cross | N51 | IR£11,000 |
| Mayo | Ballygowan, Brickeens | N60 | IR£10,000 |
| Mayo | Ballyhean | N84 | IR£10,000* |
| Meath | Colpe Cross | N01 | IR£3,000 |
| Meath | Glassallen | N02 | IR£7,500 |
| Meath | Slane Bridge | N02 | IR£7,250 |
| Roscommon | Frenchpark | N05 | IR£5,000 |
| Roscommon | Strokestown Convent | N05 | IR£5,000 |
| Waterford | Stone Bridge | N25 | IR£11,000* |
| Westmeath | The Vee of the Downs, Killucan Road and crossroads | N04 | IR£15,000* |
| Westmeath | Junction N6/N52 Kilbeggan | N06 | IR£5,000 |
| Wicklow | Rosscath - Tap | N11 | IR£8,000 |
| Wicklow | Willowgrove/Delgany Jn. | N11 | IR£7,500 |

*Table 6.3.2 Worst 20 sites by WTP method*

## 6.4. Savings and Losses

| Worst 20 Sites AC Method | Totals Before | Ave Per Annum Before | |
|---|---|---|---|
| Total Years, Before | 9 | | |
| Fatal, Before | 10 | 1.11 | |
| Serious Injury, Before | 40 | 4.44 | |
| Minor Injury, Before | 85 | 9.44 | |
| Total Injury Accidents Before | 135 | 15.00 | |
| Material | 73 | 8.11 | |
| Total Accidents | 208 | 23.11 | |
| Accident Cost, WTP | IR£ 15,214,419.25 | IR£ 1,609,491.03 | |
| Accident Cost, AC | IR£ 10,121,797,73 | IR£ 1,124,644.19 | |
| | **Totals After** | **Ave Per Annum After** | **Total Savings** |
| Total Years After | 3.09 | | |
| Fatal After | 2 | 0.65 | **1.43** |
| Serious Injury, After | 17 | 5.50 | **-3.26** |
| Minor Injury, After | 73 | 23.62 | **-43.81** |
| Total Injury Acc After | 95 | 30.74 | **-48.64** |
| After Accident Cost, WTP | IR£ 4,597,115.27 | IR£ 1,487,302.00 | **IR£ 628,038.81** |
| After Accident Cost, AC | IR£ 7,178,701.36 | IR£ 2,322,521.03 | **IR£ - 3,702,528.41** |
| **First Year RoR %,WTP** | | **172%** | **532%** |
| **First Year RoR %, AC** | | **-1014%** | **-3134%** |

*Table 6.4.1 Savings and losses. Worst 20 sites by AC method*

| Worst 20 Sites WTP Method | Totals Before | Ave Per Annum Before | |
|---|---|---|---|
| Total Years, Before | 8.95 | | |
| Fatal, Before | 6 | 0.67 | |
| Serious Injury, Before | 53 | 5.92 | |
| Minor Injury, Before | 101 | 11.28 | |
| Total Injury Accidents Before | 160 | 17.88 | |
| Material | 80 | 8.94 | |
| Total Accidents | 240 | 26.82 | |
| Accident Cost, WTP | IR£ 12,738,890.91 | IR£ 1,423,339.77 | |
| Accident Cost, AC | IR£ 12,054,334.00 | IR£ 1,346,852.96 | |
| | **Totals After** | **Ave Per Annum After** | **Total Savings** |
| Total Years After | 3.15 | | |
| Fatal After | 11 | 3.49 | **-8.89** |
| Serious Injury, After | 22 | 6.98 | **-3.35** |
| Minor Injury, After | 41 | 13.02 | **-5.45** |
| Total Injury Acc After | 77 | 24.44 | **-20.69** |
| After Accident Cost, WTP | IR£ 12,689,411.44 | IR£ 4,028,384.58 | **IR£ - 8,205,891.17** |
| After Accident Cost, AC | IR£ 5,773,661.74 | IR£ 1,832,908.49 | **IR£ - 1,531,074.91** |
| **First Year RoR %, WTP** | | **-1820%** | **-5732%** |
| **First Year RoR %, AC** | | **-340%** | **-1070%** |

*Table 6.4.2 Savings and losses. Worst 20 sites by WTP method*

As was stated before, the main factors affecting the success or otherwise of the schemes are the initial costs, the accident history and the appropriateness of the solution adopted.

Generally, the significant point in relation to these poorly performing schemes is that the average cost of the schemes is almost double that of the best performing schemes.

There is a remarkable similarity between the before histories for the best and worst twenty sites by the AC method with the real difference being in the after accident histories of the sites. (See Table 6.2.1 and Table 6.4.1).

The comparison of the results for the best and worst sites by the WTP method is revealing. Apart from the fatal accidents, the before accident histories are very similar. However, the after histories are considerably different for all types of accidents. It would appear the best 20 sites have been very successful at reducing the fatal and serious accidents even though the minor injury accidents did increase. In the case of the worst 20 sites the combined accident histories show increases per annum for fatal and for serious and minor injury accidents. (See Table 6.2.2 and Table 6.4.2).

As these are two relatively large groups of sites, 20 in each case, it would appear reasonable to conclude that either the implemented solution in the case of the poorly performing sites was not the correct solution or that it was badly applied. The reason for coming to this conclusion is that the before accident histories (for the best and worst sites) are very similar, as are the problem descriptions, but the after histories are very different.

# 7. Conclusion

From the results outlined in the previous chapters in this report it is clear that these schemes as a whole are economically justified. In terms of accident reduction the results are less clear. However, by implementing the appropriate measure the potential for reducing loss of life and suffering are immense.

The primary aim of these schemes is to reduce the numbers killed and seriously injured on our roads. The relatively small reduction in accidents masks the much larger reduction in severity that has been achieved and is evidenced by the 1200% RoR over the three year after period.

There are some failings in the implementation of the scheme. A study of this report in conjunction with the accident histories at the evaluated sites indicates that for schemes to be successful they must first be assessed properly and the recommended solution must address the problems identified.

# 1. Appendix: Site Location

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Carlow | 1 | Ballon Village | Jul-96 | Aug-96 | N80 | IR£25,000 | 283,158 | 165,915 | 1 | Village 1.044Km | 160m from MP 0182 in Dir 1 | At MP 0175 |
| 2 | Carlow | 1 | Carrickduff, Bunclody | Jul-96 | Aug-96 | N80 | IR£15,000 | 290,583 | 156,991 | 2 | Village 1.11Km | 160m from MP 0098 in Dir 1 | 965m from MP 0098 in Dir 2 |
| 3 | Carlow | 1 | Greenlane | Jul-96 | Aug-96 | N09 | IR£5,000 | 272,867 | 177,006 | 3 | Length 600m | 5150m from MP 0496 in Dir 2 | 6115m from MP 0496 in Dir 2 |
| 4 | Carlow | 1 | Millford Cross | Jul-96 | Aug-96 | N09 | IR£8,000 | 270,929 | 170,708 | 4 | Crossroads Stop/Yield | At MP 0418 | At MP 0418 |
| 5 | Carlow | 1 | Wallsforge | Jul-96 | Aug-96 | N80 | IR£5,000 | 274,314 | 175,541 | 5 | Crossroads Stop/Yield on bend | 6440m from MP 0271 in Dir 1 | At MP 0271 |
| 6 | Clare | 2 | Ballycasey and Hurlers Cross | Jan-96 | Feb-97 | N18 | IR£32,000 | 142,683 | 163,265 | 6 | Length 800m with 2 Junctions | 463 | 468 |
| 7 | Clare | 2 | Limerick Road, Clareabbey, Ennis | Oct-95 | Feb-97 | N18 | IR£23,000 | 134,249 | 175,082 | 7 | Length 582m with Junction | 1.8km from 0377 in dir | 2 2.4km from 0377 in dir2 |
| 8 | Clare | 2 | Shannon Town Old Lodge Junction | Jan-96 | Feb-97 | N19 | IR£39,000 | 141,739 | 162,975 | 8 | Junction | 600m from 0000 in dir1 | |
| 9 | Cork North | 2 | Ballymaquirke Cross, Kanturk, R579 jcn | Oct-95 | Jun-96 | N72 | IR£9,000 | 138,235 | 98,872 | 9 | Junction | 261 | |
| 10 | Cork North | 2 | Coole Junction | Oct-95 | Jun-96 | N72 | IR£3,500 | 187,389 | 97,311 | 10 | Junction | 612 | |
| 11 | Cork North | 2 | Cullen School, Lislehane | Oct-95 | Jun-96 | N72 | IR£3,500 | 123,993 | 95,808 | 11 | School | 350m from 0166 in dir 2 | |
| 12 | Cork North | 2 | Daly's Cross | Aug-95 | Jun-96 | N72 | IR£9,000 | 193,827 | 95,797 | 12 | Junction | 654 | |
| 13 | Cork North | 2 | Eelweir Cross | Oct-95 | Jun-96 | N72 | IR£12,000 | 150,722 | 98,133 | 13 | Junction | 348 | |
| 14 | Cork North | 2 | Firville Cross Roads | Oct-95 | Jun-96 | N72 | IR£3,500 | 152,467 | 98,138 | 14 | Junction | 1.0km from 0354 in dir 1 | |
| 15 | Cork North | 2 | Hospital Cross, Mallow | Oct-95 | Jun-96 | N20 | IR£9,000 | 154,766 | 100,363 | 15 | Junction | 219 | |
| 16 | Cork North | 2 | Kilmagner School, Fermoy | Oct-95 | Jun-96 | N72 | IR£3,500 | 188,478 | 96,894 | 16 | School | 1.0km from 0612 in dir 1 | |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | Cork South | 2 | Blacksticks | Oct-95 | Aug-96 | N71 | IR£5,000 | 145,836 | 53,409 | 17 | Junction | 993 | |
| 18 | Cork South | 2 | Carrigshane | Oct-95 | Apr-96 | N25 | IR£6,000 | 189,670 | 73,379 | 18 | Junction | 1118 | |
| 19 | Cork South | 2 | Churchtown North | Oct-95 | Apr-96 | N25 | IR£10,000 | 191,131 | 73,493 | 19 | Junction | 1107 | |
| 20 | Cork South | 2 | Hilltown | Oct-95 | Apr-96 | N28 | IR£3,000 | 172,673 | 65,607 | 20 | Junction | 44 | |
| 21 | Cork South | 2 | Knockmullane east of Inishannon | Oct-95 | Apr-96 | N71 | IR£10,000 | 155416 | 57649 | 21 | Junction | 300m from 1066 in dir 1 | |
| 22 | Cork South | 2 | Met-Con Junction | Oct-95 | Apr-96 | N28 | IR£10,000 | 174408 | 64750 | 22 | Junction | 26 | |
| 23 | Cork South | 2 | Pedlar's Cross | Oct-95 | Apr-96 | N71 | IR£5,000 | 141068 | 49117 | 23 | Length with Bend | 1km from 0945 in dir 1 | 300m from 0945 in dir 2 |
| 24 | Donegal | 3 | Assaroe Rd. Ballyshannon | Jan-97 | Mar-97 | N15 | IR£13,800 | 186818 | 361209 | 24 | Length | 454 | 452 |
| 25 | Donegal | 3 | Ballybofey, Main St. | Jan-97 | Mar-97 | N13 | IR£1,000 | 214203 | 394697 | 25 | Pedestrian Crossing | 300m from 138 in direction 2 | |
| 26 | Donegal | 3 | Ballybulgan | Jan-97 | Mar-97 | N15 | IR£600 | 190958 | 371564 | 26 | Bend | 1.55Km from 363 in Direction 1 | |
| 27 | Donegal | 3 | Bridgend | Jan-97 | Mar-97 | N13 | IR£800 | 239573 | 421807 | 27 | Roundabout | 75m from0274 in Direction 1 | |
| 28 | Donegal | 3 | Bundoran Pedestrian Crossing | Jan-96 | Apr-96 | N15 | IR£9,000 | 181950 | 358917 | 28 | Pedestrian Crossing | 180m from 487 in Direction 1 | |
| 29 | Donegal | 3 | Burt Junction | Jan-96 | Apr-96 | N13 | IR£15,000 | 236637 | 421580 | 29 | Junction Post | 255 | |
| 30 | Donegal | 3 | Castlefinn | Jan-97 | Mar-97 | N15 | IR£12,000 | 226268 | 395069 | 30 | Village | Post 55 | Post 61 |
| 31 | Donegal | 3 | Croaghan Heights-Lifford | Jan-97 | Mar-97 | N14 | IR£3,000 | 233209 | 398374 | 31 | Roundabout | At 127 and at 470m from 127 in Direction 2 | |
| 32 | Donegal | 3 | Drumkeen | Jan-97 | Mar-97 | N13 | IR£9,000 | 216123 | 402293 | 32 | Village | At 100m from 0042 in Direction 2 | |
| 33 | Donegal | 3 | Dry Arch RaB | Jan-97 | Mar-97 | N13 | IR£10,000 | 219065 | 410913 | 33 | Road length | Marker 0006 | Marker 0015 |
| 34 | Donegal | 3 | Finner Rd Bundoran | Jan-97 | Mar-97 | N15 | IR£7,600 | 182956 | 359477 | 34 | Length | At 100 from 0479 in Direction 1 | At 100 from 0479 in Direction 2 |
| 35 | Donegal | 3 | Galdonagh Junction | Jan-97 | Mar-97 | N14 | IR£1,000 | 227097 | 407511 | 35 | Junction | At 0047 | |
| 36 | Donegal | 3 | Griannan Junction | Jan-97 | Mar-97 | N13 | IR£500 | 236637 | 421580 | 29 | Junction | Post 255 | |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | Donegal | 3 | Junctions at 0219 and 0186 | Jan-97 | Mar-97 | N13 | IR£500 | 232945 | 417842 | 36 | Junction | Post 219 AND 186 | |
| 38 | Donegal | 3 | Kilross | Jan-96 | Apr-96 | N13 | IR£5,000 | 215971 | 397286 | 37 | Length | 2900m Post 0006 | Post 0024 |
| 39 | Donegal | 3 | Liscooley-Raphoe Junction | Jan-97 | Mar-97 | N15 | IR£400 | 223069 | 394860 | 38 | Junction | 280m from Post 0077 in Direction 1 | |
| 40 | Donegal | 3 | Lurgybrack | Jan-97 | Mar-97 | N13 | IR£56,000 | 219512 | 410069 | 39 | Roundabout | From 110 | 1000m From 110 in Direction 2 |
| 41 | Donegal | 3 | Manor Junction | Jan-96 | Apr-96 | N13 | IR£10,500 | 223394 | 410776 | 40 | Junction | Marker Post 0138 for 200m on Derry and L'Kenny Legs | |
| 42 | Donegal | 3 | Sligo Rd. Tullaghan | Jan-97 | Mar-97 | N15 | IR£13,600 | 180994 | 358719 | 41 | Length | 150 from 497 in Dir 1 | 400m from 497 in Dir 2 |
| 43 | Donegal | 3 | Trenamullin | Jan-97 | Mar-97 | N15 | IR£1,200 | 217154 | 395232 | 42 | Bends | 200m from 117 in Dir 1 | 200m from 117 in Dir 2 |
| 44 | Donegal | 3 | Trimragh Junction | Jan-96 | Apr-96 | N14 | IR£20,000 | 221669 | 411601 | 43 | Dual Carriageway | Post 125 | |
| 45 | DunLaoghaire/ Rathdown | 1 | Booterstown Avenue Jn. | Jun-95 | Oct-96 | N11 | IR£3,500 | 319712 | 229164 | 44 | T Junction | 320m from MP 0813 in Dir 1 | |
| 46 | DunLaoghaire/ Rathdown | 1 | Bray Road/Kill Lane | Jun-95 | Oct-96 | N11 | IR£28,000 | 321894 | 226330 | 45 | T Junction | 320m from MP 0784 in Dir 1 | |
| 47 | DunLaoghaire/ Rathdown | 1 | Clonkeen Road Jn. | Jun-95 | Oct-96 | N11 | IR£1,500 | 322909 | 225542 | 46 | T Junction | Post 0778 | |
| 48 | DunLaoghaire/ Rathdown | 1 | Johnstown Road Jn. | Jun-95 | Oct-96 | N11 | IR£1,500 | 323537 | 225062 | 47 | T Junction | 2415m from MP 0755 in Dir 1 | |
| 49 | DunLaoghaire/ Rathdown | 1 | Loughlinstown Roundabout | Jun-95 | Oct-96 | N11 | IR£7,500 | 324786 | 223035 | 48 | Roundabout | At MP 0755 | |
| 50 | DunLaoghaire/ Rathdown | 1 | Mount Merrion Ave | Jun-95 | Oct-96 | N31 | IR£5,500 | 319794 | 228859 | 49 | T Junction | At MP 0813 | |
| 51 | DunLaoghaire/ Rathdown | 1 | Wyattville Dual Carriageway | Oct-96 | Oct-96 | N11 | IR£2,000 | 324519 | 223305 | 50 | T Junction | 645m from MP 0755 in Dir 1 | |
| 52 | Galway | 3 | Fureys Cross | Aug-95 | Jul-97 | N06 | IR£5,000 | 140710 | 225472 | 51 | X Roads | 1100 West MP 0086 | |
| 53 | Galway | 3 | Glenbrack, Gort | Aug-95 | Jul-97 | N18 | IR£15,000 | 144754 | 202673 | 52 | Bend | 700South MP 0156 | |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | Galway | 3 | Kilcolgan | Aug-95 | Jul-97 | N18/N67 | IR£30,000 | 142024 | 217981 | 53 | Village | MP 0050 for 500m South | |
| 55 | Galway | 3 | Knockdoe | Aug-95 | Jul-97 | N17 | IR£5,000 | 139151 | 238067 | 54 | X Roads | MP 0697 | |
| 56 | Galway | 3 | Meadow Court , Loughrea | Aug-95 | Jul-97 | N06 | IR£25,000 | 157369 | 217794 | 55 | X Roads | MP 0196 | |
| 57 | Galway | 3 | Peterswell | Aug-95 | Jul-97 | N66 | IR£20,000 | 150308 | 207534 | 56 | X Roads | MP 0048 | |
| 58 | Galway | 3 | Weir Rd. Kilcolgan | Aug-95 | Jul-97 | N18 | IR£5,000 | 141766 | 218919 | 57 | T Junction | 400 S MP 0041 | |
| 59 | Kerry | 2 | Ballydwyer Cross | Apr-96 | Mar-97 | N21 | IR£7,000 | 92217 | 112606 | 58 | Junction | 450m from 0052 in dir 1 | |
| 60 | Kerry | 2 | Ballyegan Quarry | Apr-96 | Mar-97 | N21 | IR£5,000 | 95790 | 111588 | 59 | Entrance | 1.7km from 0067 in dir 1 | |
| 61 | Kerry | 2 | Camp Cross | Apr-96 | Mar-97 | N86 | IR£22,000 | 70479 | 109907 | 60 | Junction at bend | 95 | |
| 62 | Kerry | 2 | Kilmaniheen West | Apr-96 | Mar-97 | N21 | IR£20,000 | 107990 | 122219 | 61 | Length | 195 | 1.8km from 0195 in dir 2 |
| 63 | Kerry | 2 | Leamnaguilla | Apr-96 | Mar-97 | N22 | IR£1,000 | 93696 | 99759 | 62 | Junction at bend | 0.8km from 0095 in dir 1 | |
| 64 | Kerry | 2 | Raleigh | Apr-96 | Mar-97 | N71 | IR£2,500 | 92431 | 62750 | 63 | Length (Mountain road) | 271 | 320 |
| 65 | Kerry | 2 | Urrohogal, Moriarty's Cross | Apr-96 | Mar-97 | N22 | IR£5,000 | 92866 | 106870 | 64 | Length with junction | 50 | 300m from 0050 in dir1 |
| 66 | Kilkenny | 1 | KnockWilliam Bridge, Ballyhale | May-97 | Jun-97 | N09 | IR£70,000 | 254907 | 133495 | 65 | Bend | 809m from MP 0131 in Dir 1 | 1809 from 0131 in Dir 1 |
| 67 | Kilkenny | 1 | Near Jn. N24 Granny Junction | Oct-96 | Oct-96 | N09 | IR£92,000 | 258345 | 115348 | 66 | Length (Mountain road) | 161m from MP 0016 in Dir 2 | 1609m from MP 0016 in Dir 1 |
| 68 | Laois | 1 | Attanagh | Aug-95 | Jan-97 | N77 | IR£6,000 | 242225 | 176136 | 75 | Single Site | 580m NW MP 0151 | |
| 69 | Laois | 1 | Ballickmoyler | Aug-95 | Jan-97 | N80 | IR£3,000 | 266575 | 181280 | 67 | Village | MP 334 | MP 337 |
| 70 | Laois | 1 | Ballinakill Jnct. | Aug-95 | Jan-97 | N08 | IR£4,500 | 243635 | 184384 | 68 | Junction | 350m North of MP 959 in Direction 1 | |
| 71 | Laois | 1 | Boughlane, Portlaoise, at Lewis Garage | Aug-95 | Jan-97 | N07 | IR£7,000 | 245189 | 198229 | 69 | Single Site | 1600m West of MP 0521 | |
| 72 | Laois | 1 | Cloonaghadoo 1 | Aug-95 | Jan-97 | N80 | IR£3,500 | 242333 | 212308 | 70 | Bend | 950m North of MP 0613 | |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73 | Laois | 1 | Cloonaghadoo 2 | Aug-95 | Jan-97 | N80 | IR£2,000 | 241886 | 212959 | 71 | Junction | MP 0631 | |
| 74 | Laois | 1 | Jamestown Junction | Aug-95 | Jan-97 | N07 | IR£6,000 | 259454 | 207954 | 72 | Single Site | MP 0976 | |
| 75 | Laois | 1 | Killenure | Aug-95 | Jan-97 | N07 | IR£15,500 | 260691 | 208865 | 73 | Single Site | MP 0805 | |
| 76 | Laois | 1 | Moneyquid/Quarrymount | Aug-95 | Jan-97 | N80 | IR£5,000 | 238506 | 216568 | 74 | Length | MP 0660 | |
| 77 | Laois | 1 | Newtown Cross | Aug-95 | Jan-97 | N78 | IR£3,000 | 260204 | 179481 | 76 | Junction | MP 0140 | |
| 78 | Laois | 1 | Oakvale, Stradbally | Aug-95 | Jan-97 | N80 | IR£2,500 | 258215 | 195754 | 78 | Junction | 150m NW MP 0446 | |
| 79 | Laois | 1 | Sluggarey | Aug-95 | Jan-97 | N07 | IR£4,000 | 251130 | 200131 | 77 | Junction | 5664m SW MP 0759 | |
| 80 | Leitrim | 3 | Annaduff | Jan-97 | Jan-97 | N04 | IR£40,000 | 202918 | 294635 | 79 | Village | 140m NW MP 0421 | |
| 81 | Limerick | 2 | Clarina Village | Jun-95 | Jun-96 | N69 | IR£72,000 | 150804 | 153717 | 80 | Length with junction | 579 | 583 |
| 82 | Limerick | 2 | Fennessey's Bend | Jun-95 | Jun-96 | N69 | IR£10,000 | 128880 | 150336 | 81 | Length with bends | 500m from 0432 in dir 2 | 100m from 0432 in dir 2 |
| 83 | Longford | 2 | Aghnaskea ( Killashee Village) | Jun-97 | Jun-97 | N63 | IR£1,500 | 208731 | 270480 | 82 | Bridge | 551 | |
| 84 | Longford | 2 | Carrickboy Crossroads | Jun-97 | Jun-97 | N55 | IR£14,000 | 220801 | 264776 | 83 | Junction | 184 | |
| 85 | Longford | 2 | Dublin Road Edgeworthstown | Jun-97 | Jun-97 | N04 | IR£6,000 | 226039 | 271413 | 84 | Bend | 600m from 0659 in dir 2 | |
| 86 | Longford | 2 | Goshen Jn. | Jun-97 | Jun-97 | N04 | IR£16,000 | 221601 | 272949 | 85 | Junction | 625 | |
| 87 | Longford | 2 | Lissardowlan | Jun-97 | Jun-97 | N04 | IR£2,500 | 218476 | 273830 | 86 | Length with two junctions | 350m from 0606 in dir 2 | |
| 88 | Longford | 2 | Minard Jn.(Knockmartin Lane) | Jun-97 | Jun-97 | N04 | IR£6,000 | 211759 | 278410 | 87 | Junction | 800m from 0542 in dir 1 | |
| 89 | Longford | 2 | Newtownforbes Village | Jun-97 | Jun-97 | N04 | IR£10,000 | 211008 | 279299 | 88 | Bend | 535 | 540 |
| 90 | Louth | 3 | Castlebellingham Village | May-95 | Mar-96 | N01 | IR£20,000 | 305957 | 295372 | 89 | Length | 800m MP 0160 | 880m South of MP 0160 |
| 91 | Louth | 3 | Collon | May-94 | Mar-96 | N02 | IR£44,500 | 299746 | 281991 | 90 | Village/Length 1600m | 0.64km from MP 0539 in Dir 1 | 0.48km from MP 0539 in Dir 2 |
| 92 | Louth | 3 | Kilsaran Village | May-95 | Mar-96 | N01 | IR£45,000 | 305920 | 294319 | 91 | Village/Length 1300m | 1.75km from MP 0144 in Dir 1 | 4.02km from MP 0144 in Dir 1 |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 93 | Louth | 3 | Sheepgrange Cross | May-95 | Mar-96 | N51 | IR£11,000 | 301956 | 275517 | 92 | Junction | 2.01km from MP 0316 in Dir 1 | |
| 94 | Mayo | 3 | Ballygowan, Brickeens | Feb-97 | May-97 | N60 | IR£10,000 | 138524 | 274770 | 93 | Length 1200m | MP N60 0289 | MP N60 0325 |
| 95 | Mayo | 3 | Ballyhean | Feb-97 | May-97 | N84 | IR£10,000 | 113467 | 284896 | 94 | Length 1200m | MP N84 0421 | MP N84 0441 |
| 96 | Mayo | 3 | Ballyvary | Feb-97 | May-97 | N05 | IR£10,000 | 124041 | 294563 | 95 | Length 800m | MP N5 0073 | MP N5 0077 |
| 97 | Mayo | 3 | Clonkeen, Cloggernagh | Feb-97 | May-97 | N05 | IR£10,000 | 108820 | 286403 | 96 | Length 2600m | MP N5 1056 | MP N5 1072 |
| 98 | Mayo | 3 | Coolcran, Ballina-Crossmolina road, Crossmolina | Feb-97 | May-97 | N59 | IR£20,000 | 120980 | 319371 | 97 | Length 5000m | MP N59 0324 | MP N59 0355 |
| 99 | Mayo | 3 | Culmore Swinford. | Feb-97 | May-97 | N05 | IR£10,000 | 142566 | 300703 | 98 | Length 1200m | MP N5 0200 | MP N5 0210 |
| 100 | Mayo | 3 | Devlis, Coolnafarna | Feb-97 | May-97 | N60 | IR£10,000 | 152819 | 278924 | 99 | Length 3200m | MP N60 0388 | MP N60 0418 |
| 101 | Mayo | 3 | Manulla | Feb-97 | May-97 | N60 | IR£10,000 | 121465 | 288237 | 100 | Length 1200m | MP N60 0141 | MP N60 0157 |
| 102 | Mayo | 3 | Mulranny | Feb-97 | May-97 | N59 | IR£10,000 | 82546 | 296674 | 101 | Length 1200m | MP N59 0777 | MP N59 0784 |
| 103 | Mayo | 3 | Sonnagh | Feb-97 | May-97 | N05 | IR£10,500 | 145193 | 301019 | 102 | Length 2100m | MP N5 0210 | MP N5 0235 |
| 104 | Meath | 3 | Blackbull Cross | Sep-95 | Jun-96 | N03 | IR£8,000 | 301057 | 245593 | 103 | Junction | MP N3 0690 | |
| 105 | Meath | 3 | Carnaross | Sep-95 | Jun-96 | N03 | IR£25,000 | 269217 | 278361 | 104 | Village | MP N3 0384 | MP N3 0390 |
| 106 | Meath | 3 | Colpe Cross | Sep-95 | Jun-96 | N01 | IR£3,000 | 311597 | 273678 | 105 | Junction | MP N1 0322 | |
| 107 | Meath | 3 | Glassallen | Sep-95 | Jun-96 | N02 | IR£7,500 | 298924 | 279091 | 106 | Bends on Slope | 0.4i S of N2 0557 | 0.1 mi N of N2 0557 |
| 108 | Meath | 3 | Lynch's Cross | Sep-95 | Jun-96 | N52 | IR£17,500 | 268371 | 269499 | 107 | Junction | N 52 0826 | |
| 109 | Meath | 3 | Mosney Jnct. | Sep-95 | Jun-96 | N01 | IR£4,750 | 314902 | 268934 | 108 | Junction | N1 0358 | |
| 110 | Meath | 3 | Rathdrinagh Cross | Sep-95 | Jun-96 | N02 | IR£13,000 | 296400 | 271611 | 109 | Junction | N2 0611 | |
| 111 | Meath | 3 | Ross Cross | Sep-95 | Jun-96 | N03 | IR£4,000 | 294147 | 258384 | 110 | Junction | N3 0598 | |
| 112 | Meath | 3 | Slane Bridge | Sep-95 | Jun-96 | N02 | IR£7,250 | 296381 | 273783 | 111 | Bend/Slope/Bridge | 0.35 mi N of N2 0600 | |
| 113 | Roscommon | 2 | Abbey N.S.Roscommon | Nov-96 | Jun-97 | N63 | IR£5,000 | 187346 | 263985 | 112 | School | 1km from 0391 in dir1 | |
| 114 | Roscommon | 2 | Arm | May-96 | Jun-97 | N60 | IR£17,000 | 165421 | 279761 | 113 | Bridge under railway at bend | 1.1km from 0496 in dir2 | |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 115 | Roscommon | 2 | Ballinphuill | May-96 | Jun-97 | N05 | IR£7,000 | 166367 | 292919 | 114 | Junction & bend | 800m from 0379 in dir 2 | |
| 116 | Roscommon | 2 | Ballybay | May-96 | Jun-97 | N61 | IR£11,000 | 198188 | 247876 | 115 | Junction to school | 405 | |
| 117 | Roscommon | 2 | Ballyleague | May-96 | Jun-97 | N63 | IR£7,000 | 199057 | 269657 | 116 | Bend | 0.5km from 0484 in dir2 | |
| 118 | Roscommon | 2 | Bellanagare N.S. | May-96 | Jun-97 | N05 | IR£4,500 | 175280 | 287280 | 117 | School | 0.3km from 0448 in dir 1 | |
| 119 | Roscommon | 2 | Carrick N.S. | May-96 | Jun-97 | N60 | IR£5,000 | 156996 | 277884 | 118 | School | 0.6km from 0435 in dir 2 | |
| 120 | Roscommon | 2 | Drum Jn | May-96 | Jun-97 | N06 | IR£2,000 | 201074 | 240129 | 119 | Junction | 540 | |
| 121 | Roscommon | 2 | Frenchpark | May-96 | Jun-97 | N05 | IR£5,000 | 173240 | 291180 | 120 | Junction | 421 | |
| 122 | Roscommon | 2 | Mount Talbot N.S. | May-96 | Jun-97 | N63 | IR£5,000 | 181308 | 253395 | 121 | School | 0.43km from 0320 in dir 1 | |
| 123 | Roscommon | 2 | Oran | May-96 | Jun-97 | N60 | IR£15,000 | 177436 | 269666 | 122 | Bend | 613 | |
| 124 | Roscommon | 2 | Strokestown Convent | May-96 | Jun-97 | N05 | IR£5,000 | 192717 | 280767 | 123 | School | 0.4km from 0574 in dir 1 | |
| 125 | Sligo | 3 | Cullagh Beg, Drumcliff | Aug-95 | Mar-97 | N15 | IR£16,000 | 167338 | 343749 | 124 | Bend | 2.62Km from N15 0630 in Dir 1 | |
| 126 | Tipperary (N.R.) | 2 | Ballywilliam | May-95 | Jun-96 | N07 | IR£5,000 | 180049 | 174839 | 125 | Junction | 199 | |
| 127 | Tipperary (N.R.) | 2 | Bushfield Junction R499 Jn | May-95 | Jun-96 | N07 | IR£3,500 | 176388 | 171753 | 126 | Junction | 169 | |
| 128 | Tipperary (N.R.) | 2 | Junction at Ballywilliam Stores | May-95 | Jun-96 | N07 | IR£2,500 | 178954 | 173905 | 127 | Junction | 1.3km from 199 in Dir 2 | |
| 129 | Tipperary (N.R.) | 2 | Kilmastulla, R496 Jn | May-95 | Jun-96 | N07 | IR£7,000 | 174412 | 170862 | 128 | Junction | 158 | |
| 130 | Tipperary (S.R.) | 1 | Graiguepaudeen | Jan-97 | Feb-97 | N08 | IR£70,000 | 224920 | 160476 | 129 | Length 180m | 762 | |
| 131 | Waterford | 1 | Clearys Cross Junction | Nov-95 | Mar-97 | N25 | IR£2,000 | 215422 | 80153 | 130 | Junction | 903 | |
| 132 | Waterford | 1 | Piltown Cross Junction | Nov-95 | Mar-97 | N25 | IR£2,000 | 213440 | 80268 | 131 | Junction | 916 | |

| Scheme Ref. | Local Authority | Group | Description | Date Rec'd | Date Appr'd | Route No. | Appr'd Cost | X | Y | Mapinfo Indicator | Road Type | Mkr Post Start | Mkr Post End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 133 | Waterford | 1 | Scrahan Railway Bridge | Nov-95 | Sep-96 | N25 | IR£30,000 | 240448 | 105752 | 132 | Length 270m | 2Km east of MP N25 0640 | |
| 134 | Waterford | 1 | Stone Bridge | Nov-95 | Mar-97 | N25 | IR£11,000 | 209237 | 80384 | 133 | Bridge | 360 West of 0940 | |
| 135 | Waterford | 1 | Well Road Junction | Nov-95 | Mar-97 | N25 | IR£10,000 | 239667 | 105764 | 134 | Junction | 240 East of 0640 | |
| 136 | Waterford | 1 | Youghal Bridge | Nov-95 | Mar-97 | N25 | IR£20,000 | 209587 | 80830 | 135 | Bridge | 940 | |
| 137 | Westmeath | 2 | Tyrrellspass | Jul-95 | Apr-96 | N52 | IR£3,000 | 241495 | 237778 | 136 | Junction | 821 | |
| 138 | Westmeath | 2 | Ballykeeran | Jul-95 | Apr-96 | N55 | IR£2,000 | 207486 | 243994 | 137 | Junction | 22 | |
| 139 | Westmeath | 2 | Glasson | Jul-95 | Apr-96 | N55 | IR£5,000 | 209130 | 247064 | 138 | Junction | 40 | |
| 140 | Westmeath | 2 | Cloghan Cross | Jul-95 | Apr-96 | N52 | IR£10,000 | 250188 | 256139 | 139 | Junction | 671 | |
| 141 | Westmeath | 2 | Moate west/Turnpike - Church St & Additional | Apr-96 | Sep-96 | N06 | IR£37,000 | 217701 | 238393 | 140 | Length | 666 | 668 |
| 142 | Westmeath | 2 | The Vee of the Downs, Killucan Road & crossroads | Jul-95 | Sep-96 | N04 | IR£15,000 | 250192 | 250909 | 141 | 2 Junctions | 867 | 0.6km from 0867 in dir 1 |
| 143 | Westmeath | 2 | Fardrum Junction+additional | Apr-96 | Sep-96 | N06/N 62 | IR£6,000 | 208147 | 239052 | 142 | Junction | 604 | |
| 144 | Westmeath | 2 | Cornamaddy School & additional | Apr-96 | Feb-97 | N55 | IR£33,000 | 206548 | 242721 | 143 | Junction at school | 1.1km from 0018 in dir 2 | |
| 145 | Westmeath | 2 | Junction N6/N52 Kilbeggan | Apr-96 | Sep-96 | N06 | IR£5,000 | 233622 | 235336 | 144 | Junction | 769 | |
| 146 | Westmeath | 2 | N6 Junctions | Apr-97 | May-97 | N06 | IR£16,500 | 213881 | 237979 | 145 | Junctions | 1.9Km in Dir 1 from 0604 | 1.8Km in Dir 1 from 0650 |
| 147 | Westmeath | 2 | N4 Junctions, Ballinaleck to Portnashangan, 4 jns. on the route | Apr-97 | May-97 | N04 | IR£14,500 | 232864 | 266338 | 146 | Junctions | 699 | 794 |
| 148 | Wicklow | 1 | Cullenmore bends | Dec-95 | Apr-97 | N11 | IR£15,000 | 328094 | 200568 | 147 | Length | 645m from MP 0596 in Dir 1 | 2255m from MP 0596 in Dir 1 |
| 149 | Wicklow | 1 | Dublin road Arklow | Dec-95 | Apr-97 | N11 | IR£2,000 | 324902 | 175234 | 148 | Length 400m | At MP 0425 | 645m from MP 0425 in Dir 2 |
| 150 | Wicklow | 1 | Rosscath - Tap | Dec-95 | Apr-97 | N11 | IR£8,000 | 326264 | 188430 | 149 | Length 3000m | 1125m from MP 0536 in Dir 2 | 4990m from MP 0536 in Dir 2 |
| 151 | Wicklow | 1 | Willowgrove/ Delgany Junction | Dec-95 | Apr-97 | N11 | IR£7,500 | 326873 | 209784 | 150 | Junction | At MP 0668 | |

# 2. Appendix: Accident Histories

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | Mat Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Carlow | Ballon Village | 88-96 | 9 | 1 | 4 | 5 | 10 | | 10 | IR£159,506 | IR£83,694 | Jul-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 623% | 234% |
| 2 | Carlow | Carrickduff, Bunclody | 88-96 | 9 | 1 | 2 | 2 | 5 | | 5 | IR£130,403 | IR£41,847 | Jul-97 | 98-2000 | 3 | 0 | 1 | 3 | 4 | | 4 | IR£49,140 | IR£100,433 | 542% | -391% |
| 3 | Carlow | Greenlane | 88-96 | 9 | 2 | 4 | 16 | 22 | | 22 | IR£275,436 | IR£184,128 | Jul-97 | 98-2000 | 3 | 0 | 0 | 7 | 7 | | 7 | IR£25,601 | IR£175,758 | 4997% | 167% |
| 4 | Carlow | Millford Cross | 88-96 | 9 | 0 | 0 | 4 | 4 | | 4 | IR£4,876 | IR£33,478 | Jul-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | -30% | -209% |
| 5 | Carlow | Wallsforge | 88-96 | 9 | 1 | 0 | 2 | 3 | | 3 | IR£104,958 | IR£25,108 | Jul-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 1953% | -502% |
| 6 | Clare | Ballycasey and Hurlers Cross | 88-95 | 8 | 2 | 8 | 9 | 19 | 60 | 79 | IR£357,517 | IR£178,897 | Aug-96 | 97-2000 | 4 | 1 | 5 | 4 | 10 | 0 | 10 | IR£384,771 | IR£188,313 | -85% | -29% |
| 7 | Clare | Limerick Road, Clareabbey, Ennis | 88-96 | 9 | 1 | 7 | 7 | 15 | 15 | 30 | IR£200,112 | IR£125,542 | Jun-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 838% | 328% |
| 8 | Clare | Shannon Town Old Lodge Junction | 90-95 | 6 | | | 4 | 4 | 12 | 16 | IR£7,315 | IR£50,217 | Oct-97 | 98-2000 | 3 | 0 | 0 | | | | | IR£0 | IR£0 | 19% | 129% |
| 9 | Cork | North Ballymaquirke Cross, Kanturk, R579 jcn | 88-95 | 8 | | 2 | 4 | 6 | 2 | 8 | IR£34,112 | IR£56,494 | Nov-96 | 97-2000 | 4 | 0 | 0 | 2 | 2 | | 2 | IR£5,486 | IR£37,663 | 318% | 209% |
| 10 | Cork North | Coole Junction | 88-95 | 8 | | | | | 0 | 0 | IR£0 | IR£0 | Nov-96 | 97-2000 | 4 | | | | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 11 | Cork North | Cullen School, Lislehane | 88-95 | 8 | | | | 0 | | 0 | IR£0 | IR£0 | Nov-96 | 97-2000 | 4 | | | | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 12 | Cork North | Daly's Cross | 91-93 | 3 | | | | 0 | 2 | 2 | IR£0 | IR£0 | Dec-96 | 97-2000 | 4 | | | | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 13 | Cork North | Eelweir Cross | 88-95 | 8 | 0 | 0 | 2 | 2 | | 2 | IR£2,743 | IR£18,831 | Sep-96 | 97-2000 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | IR£0 | IR£0 | 23% | 157% |
| 14 | Cork North | Firville Cross Roads | 88-95 | 8 | 0 | 4 | 1 | 5 | 3 | 8 | IR£58,623 | IR£47,078 | Oct-96 | 97-2000 | 4 | 0 | 1 | 1 | 2 | | 2 | IR£31,369 | IR£37,663 | 779% | 269% |
| 15 | Cork North | Hospital Cross, Mallow | 88-95 | 8 | 0 | 3 | 0 | 3 | | 3 | IR£42,939 | IR£28,247 | Sep-96 | 97-2000 | 4 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 477% | 314% |
| 16 | Cork North | Kilmagner School, Fermoy | 91-95 | 5 | | | | 0 | | 0 | IR£0 | IR£0 | Sep-96 | 97-2000 | 4 | | | | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 17 | Cork South | Blacksticks | 88-95 | 8 | 0 | 1 | 7 | 8 | 7 | 15 | IR£23,913 | IR£75,325 | Aug-96 | 97-2000 | 4 | 0 | 1 | 0 | 1 | 0 | 1 | IR£28,626 | IR£18,831 | -94% | 1130 % |
| 18 | Cork South | Carrigshane | 88-95 | 8 | 0 | 2 | 0 | 2 | 2 | 4 | IR£28,626 | IR£18,831 | Aug-96 | 97-2000 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | IR£0 | IR£0 | 477% | 314% |
| 19 | Cork South | Churchtown North | 88-95 | 8 | 0 | 1 | 3 | 4 | 6 | 10 | IR£18,427 | IR£37,663 | Aug-96 | 97-2000 | 4 | 0 | 1 | 1 | 2 | 0 | 2 | IR£31,369 | IR£37,663 | -129% | 0% |
| 20 | Cork South | Hilltown | 88-95 | 8 | 0 | 1 | 1 | 2 | 3 | 5 | IR£15,684 | IR£18,831 | Nov-96 | 97-2000 | 4 | 0 | 0 | 1 | 1 | | 1 | IR£2,743 | IR£18,831 | 431% | 0% |

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | M at Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | Cork South | Knockmullane east of Inishannon | 88-95 | 8 | 0 | 2 | 4 | 6 | 5 | 11 | IR£34,112 | IR£56,494 | Aug-96 | 97-2000 | 4 | 0 | 0 | 2 | 2 | | 2 | IR£5,486 | IR£37,663 | 286% | 188% |
| 22 | Cork South | Met-Con Junction | 88-95 | 8 | 0 | 2 | 6 | 8 | 1 | 9 | IR£36,855 | IR£75,325 | Nov-96 | 97-2000 | 4 | 1 | 0 | 1 | 2 | | 2 | IR£233,413 | IR£37,663 | -1966% | 377% |
| 23 | Cork South | Pedlar's Cross | 88-95 | 8 | 2 | 4 | 1 | 7 | 3 | 10 | IR£289,293 | IR£65,909 | Aug-96 | 97-2000 | 4 | 0 | 1 | 0 | 1 | | 1 | IR£28,626 | IR£18,831 | 5213% | 942% |
| 24 | Donegal | Assaroe Rd. Ballyshannon | 88-96 | 9 | 1 | 6 | 6 | 13 | 5 | 18 | IR£186,170 | IR£108,803 | Jul-97 | 98-2000 | 3 | 0 | 1 | 1 | 2 | | 2 | IR£41,825 | IR£50,217 | 1046% | 425% |
| 25 | Donegal | Ballybofey, Main St. | 88-96 | 9 | 0 | 3 | 3 | 6 | 8 | 14 | IR£41,825 | IR£50,217 | Oct-97 | 98-2000 | 3 | 0 | 0 | 5 | 5 | | 5 | IR£18,287 | IR£125,542 | 2354% | -7533% |
| 26 | Donegal | Ballybulgan | 88-96 | 9 | 0 | 1 | 1 | 2 | 2 | 4 | IR£13,942 | IR£16,739 | Nov-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | IR£0 | IR£0 | 2324% | 2790% |
| 27 | Donegal | Bridgend | 88-96 | 9 | 0 | 2 | 2 | 4 | 0 | 4 | IR£27,883 | IR£33,478 | Nov-97 | 98-2000 | 3 | 0 | 1 | 2 | 3 | | 3 | IR£45,482 | IR£75,325 | -2200% | -5231% |
| 28 | Donegal | Bundoran Pedestrian Crossing | 88-95 | 8 | 0 | 1 | 4 | 5 | | 5 | IR£19,799 | IR£47,078 | Jul-96 | 97-2000 | 4 | 0 | 1 | 1 | 2 | | 2 | IR£31,369 | IR£37,663 | -129% | 105% |
| 29 | Donegal | Burt Junction | 88-95 | 8 | 1 | 4 | 1 | 6 | | 6 | IR£173,958 | IR£56,494 | Sep-96 | 97-2000 | 4 | 0 | 0 | 3 | 3 | | 3 | IR£8,229 | IR£56,494 | 1105% | 0% |
| 30 | Donegal | Castlefinn | 88-99 | 11 | 1 | 2 | 8 | 11 | 5 | 16 | IR£112,678 | IR£75,325 | Jun-00 | Jun-05 | 1 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 939% | 628% |
| 31 | Donegal | Croaghan Heights-Lifford | 88-96 | 9 | 0 | 1 | 1 | 2 | 0 | 2 | IR£13,942 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 465% | 558% |
| 32 | Donegal | Drumkeen | 88-97 | 10 | 0 | 1 | 1 | 2 | 0 | 2 | IR£12,548 | IR£15,065 | Jul-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 139% | 167% |
| 33 | Donegal | Dry Arch RaB | 88-97 | 10 | 1 | 3 | 10 | 14 | 1 | 15 | IR£137,591 | IR£105,455 | Jul-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 1339% | 803% |
| 34 | Donegal | Finner Rd Bundoran | 88-96 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | IR£0 | IR£0 | Jul-97 | 98-2000 | 3 | 0 | 1 | 2 | 3 | | 3 | IR£45,482 | IR£75,325 | -598% | -991% |
| 35 | Donegal | Galdonagh Junction | 88-97 | 10 | 0 | 0 | 1 | 1 | 1 | 2 | IR£1,097 | IR£7,533 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 110% | 753% |
| 36 | Donegal | Griannan Junction | 94-96 | 3 | 0 | 1 | 2 | 3 | 1 | 4 | IR£45,482 | IR£75,325 | Sep-97 | 98-2000 | 3 | 0 | 0 | 3 | 3 | | 3 | IR£10,972 | IR£75,325 | 6902% | 0% |
| 37 | Donegal | Junctions at 0219 and 0186 | 94-97 | 4 | 1 | 1 | 1 | 3 | 2 | 5 | IR£262,039 | IR£56,494 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | 1 | 2 | IR£3,657 | IR£25,108 | 51676% | 6277% |
| 38 | Donegal | Kilross | 88-96 | 9 | 3 | 7 | 4 | 14 | 50 | 64 | IR£401,494 | IR£117,172 | Jul-96 | 97-2000 | 4 | 0 | 0 | 5 | 5 | | 5 | IR£13,715 | IR£94,156 | 7756% | 460% |
| 39 | Donegal | Liscooley-Raphoe Junction | 94-96 | 3 | 0 | 0 | 0 | 0 | 2 | 2 | IR£0 | IR£0 | Sep-97 | 97-2000 | 4 | 0 | 0 | 0 | 0 | 2 | 2 | IR£0 | IR£0 | 0% | 0% |
| 40 | Donegal | Lurgybrack | 94-96 | 3 | 0 | 0 | 1 | 1 | 0 | 1 | IR£3,657 | IR£25,108 | Nov-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 7% | 45% |
| 41 | Donegal | Manor Junction | 90-94 | 5 | 2 | 0 | 1 | 3 | 5 | 8 | IR£371,266 | IR£45,195 | Aug-96 | 97-2000 | 4 | 0 | 0 | 3 | 3 | 3 | 6 | IR£8,229 | IR£56,494 | 3457% | -108% |
| 42 | Donegal | Sligo Rd. Tullaghan | 88-96 | 9 | 0 | 3 | 9 | 12 | 1 | 13 | IR£49,140 | IR£100,433 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | IR£0 | IR£0 | 361% | 738% |
| 43 | Donegal | Trenamullin | 88-96 | 9 | 0 | 2 | 3 | 5 | 1 | 6 | IR£29,102 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 2120% | 1395% |

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | Mat Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44 | Donegal | Trimragh | Junction | 88-96 | 9 | 1 | 2 | 2 | 5 | 5 | IR£130,403 | IR£41,847 | Aug-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 652% | 209% |
| 45 | DunLaoghaire/ Rathdown | Booterstown Avenue Jn. | 88-96 | 9 | 0 | 4 | 5 | 9 | 18 | 27 | IR£56,986 | IR£75,325 | Sep-97 | 98-2000 | 3 | 0 | 1 | 4 | 5 | | 5 | IR£52,797 | IR£125,542 | 120% | -1435% |
| 46 | DunLaoghaire/ Rathdown | Bray Road/Kill Lane | 88-96 | 9 | 0 | 5 | 15 | 20 | 12 | 32 | IR£81,899 | IR£167,389 | Sep-97 | 98-2000 | 3 | 0 | 1 | 7 | 8 | | 8 | IR£63,769 | IR£200,867 | 65% | -120% |
| 47 | DunLaoghaire/ Rathdown | Clonkeen Road Jn. | 88-96 | 9 | 4 | 7 | 16 | 27 | | 27 | IR£518,644 | IR£225,975 | Sep-97 | 98-2000 | 3 | 0 | 3 | 7 | 10 | | 10 | IR£140,104 | IR£251,083 | 25236% | -1674% |
| 48 | DunLaoghaire/ Rathdown | Johnstown Road Jn. | 88-96 | 9 | 0 | 3 | 9 | 12 | | 12 | IR£49,140 | IR£100,433 | Sep-97 | 98-2000 | 3 | 0 | 1 | 1 | 2 | | 2 | IR£41,825 | IR£50,217 | 488% | 3348% |
| 49 | DunLaoghaire/ Rathdown | Loughlinstown Roundabout | 88-96 | 9 | 1 | 3 | 10 | 14 | 8 | 22 | IR£152,879 | IR£117,172 | Sep-97 | 98-2000 | 3 | 0 | 0 | 8 | 8 | | 8 | IR£29,259 | IR£200,867 | 1648% | -1116% |
| 50 | DunLaoghaire/ Rathdown | Mount Merrion Ave | 88-96 | 9 | 0 | 2 | 12 | 14 | 1 | 15 | IR£40,074 | IR£117,172 | Sep-97 | 98-2000 | 3 | 0 | 1 | 2 | 3 | | 3 | IR£45,482 | IR£75,325 | -98% | 761% |
| 51 | DunLaoghaire/ Rathdown | Wyattville Dual Carriageway | 88-96 | 9 | 0 | 0 | 3 | 3 | | 3 | IR£3,657 | IR£25,108 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 183% | 1255% |
| 52 | Galway | Fureys Cross | 88-96 | 9 | 2 | 3 | 3 | 8 | 0 | 8 | IR£246,865 | IR£66,956 | Sep-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 4791% | 335% |
| 53 | Galway | Glenbrack, Gort | 88-96 | 9 | 0 | 0 | 0 | 0 | 4 | 4 | IR£0 | IR£0 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 54 | Galway | Kilcolgan | 88-96 | 9 | 2 | 4 | 10 | 16 | 12 | 28 | IR£268,121 | IR£133,911 | Sep-97 | 98-2000 | 3 | 0 | 0 | 8 | 8 | | 8 | IR£29,259 | IR£200,867 | 796% | -223% |
| 55 | Galway | Knockdoe | 88-96 | 9 | 0 | 1 | 2 | 3 | 4 | 7 | IR£15,161 | IR£25,108 | Sep-97 | 98-2000 | 3 | 1 | 0 | 5 | 6 | | 6 | IR£325,847 | IR£150,650 | -6214% | -2511% |
| 56 | Galway | Meadow Court , Loughrea | 88-96 | 9 | 2 | 2 | 8 | 12 | 2 | 14 | IR£240,238 | IR£100,433 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 946% | 301% |
| 57 | Galway | Peterswell | 88-96 | 9 | 0 | 0 | 2 | 2 | 3 | 5 | IR£2,438 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 12% | 84% |
| 58 | Galway | Weir Rd. Kilcolgan | 88-96 | 9 | 0 | 0 | 1 | 1 | 5 | 6 | IR£1,219 | IR£8,369 | Sep-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | -122% | -837% |
| 59 | Kerry | Ballydwyer Cross | 88-96 | 9 | 1 | | 3 | 4 | 4 | 8 | IR£106,177 | IR£33,478 | Sep-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 1412% | -239% |
| 60 | Kerry | Ballyegan Quarry | 88-96 | 9 | 1 | | 1 | 2 | | 2 | IR£103,739 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 1 | 0 | 1 | | 1 | IR£38,168 | IR£25,108 | 1311% | -167% |
| 61 | Kerry | Camp Cross | 88-96 | 9 | 1 | 2 | 2 | 5 | 9 | 14 | IR£130,403 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 1 | 0 | 1 | | 1 | IR£38,168 | IR£25,108 | 419% | 76% |
| 62 | Kerry | Kilmaniheen West | 88-96 | 9 | 1 | 3 | 3 | 7 | 4 | 11 | IR£144,345 | IR£58,586 | Sep-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 685% | 42% |
| 63 | Kerry | Leamnaguilla | 88-96 | 9 | 0 | 1 | 2 | 3 | 1 | 4 | IR£15,161 | IR£25,108 | Sep-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 785% | -2511% |
| 64 | Kerry | Raleigh | 88-96 | 9 | 1 | 2 | 2 | 5 | 2 | 7 | IR£130,403 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 1 | 0 | 1 | | 1 | IR£38,168 | IR£25,108 | 3689% | 670% |
| 65 | Kerry | Urrohogal, Moriarty's Cross | 88-96 | 9 | | 2 | | 2 | 2 | 4 | IR£25,445 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 436% | -167% |

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | Mat Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 66 | Kilkenny | KnockWilliam Bridge, Ballyhale | 88-96 | 9 | 0 | 2 | 3 | 5 | 10 | 15 | IR£29,102 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 1 | 4 | 5 | | 5 | IR£52,797 | IR£125,542 | -34% | -120% |
| 67 | Kilkenny | Near Jn. N24 Granny Junction | 88-96 | 9 | 2 | 3 | 12 | 17 | | 17 | IR£257,837 | IR£142,281 | Sep-97 | 98-2000 | 3 | 0 | 2 | 2 | 4 | | 4 | IR£83,650 | IR£100,433 | 189% | 45% |
| 68 | Laois | Attanagh | 88-96 | 9 | 1 | 1 | 2 | 4 | | 4 | IR£117,681 | IR£33,478 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 1961% | 558% |
| 69 | Laois | Ballickmoyler | 88-96 | 9 | 0 | 3 | 1 | 4 | | 4 | IR£39,387 | IR£33,478 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 1313% | 1116 % |
| 70 | Laois | Ballinakill Jnct. | 88-96 | 9 | 0 | 0 | 1 | 1 | | 1 | IR£1,219 | IR£8,369 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 27% | 186% |
| 71 | Laois | Boughlane, Portlaoise, at Lewis Garage 88-96 | 88-96 | 9 | 1 | 3 | 2 | 6 | | 6 | IR£143,126 | IR£50,217 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 2045% | 717% |
| 72 | Laois | Cloonaghadoo 1 | 88-96 | 9 | 0 | 2 | 0 | 2 | | 2 | IR£25,445 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 623% | -239% |
| 73 | Laois | Cloonaghadoo 2 | 88-96 | 9 | 1 | 1 | 0 | 2 | | 2 | IR£115,243 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 5762% | 837% |
| 74 | Laois | Jamestown Junction | 88-96 | 9 | 5 | 2 | 2 | 9 | | 9 | IR£540,483 | IR£75,325 | Sep-97 | 98-2000 | 3 | 1 | 2 | 0 | 3 | | 3 | IR£383,895 | IR£75,325 | 2610% | 0% |
| 75 | Laois | Killenure | 88-96 | 9 | 1 | 1 | | 2 | | 2 | IR£115,243 | IR£16,739 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 744% | 108% |
| 76 | Laois | Moneyquid/ Quarrymount | 88-96 | 9 | 0 | 2 | 2 | 4 | | 4 | IR£27,883 | IR£33,478 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 558% | 670% |
| 77 | Laois | Newtown Cross | 88-96 | 9 | 0 | 2 | 4 | 6 | | 6 | IR£30,322 | IR£50,217 | Sep-97 | 98-2000 | 3 | 0 | 1 | 2 | 3 | | 3 | IR£45,482 | IR£75,325 | -505% | -837% |
| 78 | Laois | Oakvale, Stradbally | 88-96 | 9 | 0 | 1 | 0 | 1 | | 1 | IR£12,723 | IR£8,369 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 509% | 335% |
| 79 | Laois | Sluggarey | 88-96 | 9 | 1 | 0 | 4 | 5 | | 5 | IR£107,396 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 2502% | -209% |
| 80 | Leitrim | Annaduff | 88-96 | 9 | 1 | 1 | 3 | 5 | | 5 | IR£118,900 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 297% | 105% |
| 81 | Limerick | Clarina Village | 88-96 | 9 | 1 | 2 | 7 | 10 | 7 | 17 | IR£136,499 | IR£83,694 | Mar-97 | 98-2000 | 3 | 0 | 0 | 2 | 2 | | 2 | IR£7,315 | IR£50,217 | 179% | 46% |
| 82 | Limerick | Fennessey's Bend | 88-96 | 9 | 1 | 4 | 5 | 10 | 10 | 20 | IR£159,506 | IR£83,694 | Mar-97 | 98-2000 | 3 | 1 | 1 | 0 | 2 | | 2 | IR£345,728 | IR£50,217 | -1862% | 335% |
| 83 | Longford | Aghnaskea (Killashee Village) | 88-97 | 10 | 0 | 3 | 3 | 6 | 2 | 8 | IR£37,643 | IR£45,195 | Aug-98 | 99-2000 | 2 | 0 | 1 | 0 | 1 | | 1 | IR£57,252 | IR£37,663 | -1307% | 502% |
| 84 | Longford | Carrickboy Crossroads | 88-99 | 12 | 0 | 0 | 6 | 6 | 3 | 9 | IR£5,486 | IR£37,663 | Mar-00 | Jun-05 | 1 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 39% | 269% |
| 85 | Longford | Dublin Road Edgeworthstown | 88-99 | 12 | 1 | 1 | 7 | 9 | 2 | 11 | IR£92,832 | IR£56,494 | Mar-00 | Jun-05 | 1 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 1547% | 942% |
| 86 | Longford | Goshen Jn. | 88-97 | 10 | | 3 | 6 | 9 | 3 | 12 | IR£40,934 | IR£67,793 | Jun-98 | 99-2000 | 2 | 0 | 0 | 3 | 3 | | 3 | IR£16,458 | IR£112,988 | 153% | -282% |
| 87 | Longford | Lissardowlan | 88-99 | 12 | | 1 | 8 | 9 | 3 | 12 | IR£16,857 | IR£56,494 | Mar-00 | Jun-05 | 1 | 0 | 0 | 1 | 1 | | 1 | IR£10,972 | IR£75,325 | 235% | -753% |
| 88 | Longford | Minard Jn.(Knockmartin Lane) | 88-99 | 12 | 1 | 1 | 0 | 3 | 4 | 7 | IR£86,432 | IR£18,831 | Mar-00 | Jun-05 | 1 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 1441% | 314% |

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | Mat Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 89 | Longford | Newtownforbes Village | 88-99 | 12 | 0 | 1 | 3 | 4 | 1 | 5 | IR£12,285 | IR£25,108 | Mar-00 | Jun-05 | 1 | 0 | 0 | 1 | 1 | | 1 | IR£10,972 | IR£75,325 | 13% | -502% |
| 90 | Louth | Castlebellingham Village | 88-95 | 8 | 2 | 8 | 10 | 20 | 13 | 33 | IR£358,888 | IR£188,313 | Nov-96 | 97-2000 | 4 | 1 | 1 | 6 | 8 | | 8 | IR£275,754 | IR£150,650 | 416% | 188% |
| 91 | Louth | Collon | 88-95 | 8 | 2 | 6 | 4 | 12 | 0 | 12 | IR£322,033 | IR£112,988 | Jun-96 | 97-2000 | 4 | 0 | 2 | 4 | 6 | | 6 | IR£68,224 | IR£112,988 | 570% | 0% |
| 92 | Louth | Kilsaran Village | 88-95 | 8 | 2 | 7 | 8 | 17 | | 17 | IR£341,832 | IR£160,066 | Jun-96 | 97-2000 | 4 | 0 | 1 | 7 | 8 | | 8 | IR£47,827 | IR£150,650 | 653% | 21% |
| 93 | Louth | Sheepgrange Cross | 88-95 | 8 | 0 | 3 | 5 | 8 | 5 | 13 | IR£49,796 | IR£75,325 | Jun-96 | 97-2000 | 4 | 1 | 1 | 3 | 5 | | 5 | IR£267,525 | IR£94,156 | -1979% | -171% |
| 94 | Mayo | Ballygowan, Brickeens | 88-96 | 9 | 1 | 3 | 7 | 11 | 2 | 13 | IR£149,221 | IR£92,064 | Sep-97 | 98-2000 | 3 | 1 | 0 | 3 | 4 | | 4 | IR£318,532 | IR£100,433 | -1693% | -84% |
| 95 | Mayo | Ballyhean | 88-96 | 9 | 0 | 1 | 7 | 8 | 0 | 8 | IR£21,256 | IR£66,956 | Sep-97 | 98-2000 | 3 | 1 | 0 | 1 | 5 | | 5 | IR£311,217 | IR£125,542 | -2900% | -586% |
| 96 | Mayo | Ballyvary | 88-96 | 9 | 1 | 2 | 8 | 11 | 5 | 16 | IR£137,718 | IR£92,064 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 1377% | 921% |
| 97 | Mayo | Clonkeen, Cloggernagh | 88-96 | 9 | 2 | 4 | 6 | 12 | 2 | 14 | IR£263,245 | IR£100,433 | Sep-97 | 98-2000 | 3 | 0 | 1 | 4 | 5 | | 5 | IR£52,797 | IR£125,542 | 2104% | -251% |
| 98 | Mayo | Coolcran, Ballina-Crossmolina road & C50 | 88-96 | 9 | 3 | 4 | 14 | 21 | 3 | 24 | IR£375,518 | IR£175,758 | Sep-97 | 98-2000 | 3 | 0 | 1 | 2 | 3 | | 3 | IR£45,482 | IR£75,325 | 1650% | 502% |
| 99 | Mayo | Culmore Swinford. | 88-96 | 9 | 0 | 1 | 4 | 5 | 2 | 7 | IR£17,599 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 139% | 167% |
| 100 | Mayo | Devlis, Coolnafarna | 88-96 | 9 | 1 | 3 | 9 | 13 | 7 | 20 | IR£151,660 | IR£108,803 | Sep-97 | 98-2000 | 3 | 0 | 1 | 1 | 2 | | 2 | IR£41,825 | IR£50,217 | 1098% | 586% |
| 101 | Mayo | Manulla | 88-96 | 9 | 0 | 1 | 0 | 1 | 4 | 5 | IR£12,723 | IR£8,369 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 91% | -167% |
| 102 | Mayo | Mulranny | 88-96 | 9 | 0 | 3 | 2 | 5 | 1 | 6 | IR£40,606 | IR£41,847 | Sep-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 369% | 167% |
| 103 | Mayo | Sonnagh | 88-96 | 9 | 1 | 2 | 8 | 11 | 5 | 16 | IR£137,718 | IR£92,064 | Sep-97 | 98-2000 | 3 | 0 | 1 | 3 | 4 | | 4 | IR£49,140 | IR£100,433 | 844% | -80% |
| 104 | Meath | Blackbull Cross | 88-95 | 8 | 0 | 1 | 8 | 9 | 7 | 16 | IR£25,285 | IR£84,741 | Sep-96 | 97-2000 | 4 | 0 | 1 | 4 | 5 | | 5 | IR£39,598 | IR£94,156 | -179% | -118% |
| 105 | Meath | Carnaross | 88-95 | 8 | 1 | 2 | 3 | 6 | | 6 | IR£148,075 | IR£56,494 | Sep-96 | 97-2000 | 4 | 0 | 0 | 3 | 3 | | 3 | IR£8,229 | IR£56,494 | 559% | 0% |
| 106 | Meath | Colpe Cross | 88-95 | 8 | 2 | 5 | 8 | 15 | 5 | 20 | IR£313,206 | IR£141,234 | Sep-96 | 97-2000 | 4 | 1 | 3 | 2 | 6 | | 6 | IR£322,033 | IR£112,988 | -294% | 942% |
| 107 | Meath | Glassallen | 88-95 | 8 | 0 | 4 | 5 | 9 | 7 | 16 | IR£64,109 | IR£84,741 | Sep-96 | 97-2000 | 4 | 1 | 1 | 2 | 4 | | 4 | IR£264,782 | IR£75,325 | -2676% | 126% |
| 108 | Meath | Lynch's Cross | 88-95 | 8 | 0 | 3 | 4 | 7 | 3 | 10 | IR£48,425 | IR£65,909 | Sep-96 | 97-2000 | 4 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 277% | 377% |
| 109 | Meath | Mosney Jnct. | 88-95 | 8 | 0 | 3 | 3 | 6 | 3 | 9 | IR£47,053 | IR£56,494 | Sep-96 | 97-2000 | 4 | 0 | 0 | 1 | 1 | | 1 | IR£2,743 | IR£18,831 | 933% | 793% |
| 110 | Meath | Rathdrinagh Cross | 88-95 | 8 | 1 | 5 | 1 | 7 | 5 | 12 | IR£188,271 | IR£65,909 | Sep-96 | 97-2000 | 4 | 0 | 1 | 2 | 3 | | 3 | IR£34,112 | IR£56,494 | 1186% | 72% |
| 111 | Meath | Ross Cross | 88-95 | 8 | 1 | 2 | 2 | 5 | 4 | 9 | IR£146,704 | IR£47,078 | Sep-96 | 97-2000 | 4 | 0 | 0 | 5 | 5 | | 5 | IR£13,715 | IR£94,156 | 3325% | -1177% |
| 112 | Meath | Slane Bridge | 88-95 | 8 | 0 | 1 | 3 | 4 | 7 | 11 | IR£18,427 | IR£37,663 | Sep-96 | 97-2000 | 4 | 0 | 1 | 3 | 4 | | 4 | IR£36,855 | IR£75,325 | -254% | -519% |
| 113 | Roscommon | Abbey N.S.Roscommon | 88-96 | 9 | 1 | 2 | 4 | 7 | 1 | 8 | IR£132,842 | IR£58,586 | Oct-97 | 98-2000 | 3 | 0 | 0 | 3 | 3 | | 3 | IR£10,972 | IR£75,325 | 2437% | -335% |

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | M at Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 114 | Roscommon | Arm | 88-97 | 10 | 0 | 1 | 0 | 1 | 3 | 4 | IR£11,450 | IR£7,533 | Mar-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 67% | 44% |
| 115 | Roscommon | Ballinphuill | 88-97 | 10 | 1 | 0 | 0 | 1 | | 1 | IR£92,268 | IR£7,533 | May-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 1318% | 108% |
| 116 | Roscommon | Ballybay | 88-97 | 10 | | | | 0 | 2 | 2 | IR£0 | IR£0 | Mar-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 117 | Roscommon | Ballyleague | 88-97 | 10 | 0 | 0 | 3 | 3 | 4 | 7 | IR£3,292 | IR£22,598 | Mar-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 47% | 323% |
| 118 | Roscommon | Bellanagare N.S. | 88-97 | 10 | 0 | 1 | 0 | 1 | 1 | 2 | IR£11,450 | IR£7,533 | Mar-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 254% | 167% |
| 119 | Roscommon | Carrick N.S. | 88-97 | 10 | | 1 | 2 | 3 | 1 | 4 | IR£13,645 | IR£22,598 | Mar-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 273% | 452% |
| 120 | Roscommon | Drum Jn | 88-96 | 9 | 1 | 1 | 3 | 5 | 5 | 10 | IR£118,900 | IR£41,847 | Nov-97 | 98-2000 | 3 | 0 | 1 | 0 | 1 | | 1 | IR£38,168 | IR£25,108 | 4037% | 837% |
| 121 | Roscommon | Frenchpark | 88-97 | 10 | 0 | 3 | 10 | 13 | | 13 | IR£45,323 | IR£97,923 | Nov-98 | 99-2000 | 2 | 0 | 1 | 1 | 2 | | 2 | IR£62,738 | IR£75,325 | -348% | 452% |
| 122 | Roscommon | Mount Talbot N.S. | 88-96 | 9 | 0 | 0 | 0 | 0 | 1 | 1 | IR£0 | IR£0 | Oct-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 0% | 0% |
| 123 | Roscommon | Oran | 88-96 | 9 | | 1 | 3 | 4 | 4 | 8 | IR£16,380 | IR£33,478 | Oct-97 | 89-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 85% | 56% |
| 124 | Roscommon | Strokestown Convent | 88-97 | 10 | 0 | 2 | 0 | 2 | | 2 | IR£22,901 | IR£15,065 | Mar-98 | 99-2000 | 2 | 0 | 1 | 0 | 1 | | 1 | IR£57,252 | IR£37,663 | -687% | -452% |
| 125 | Sligo | Cullagh Beg, Drumcliff | 88-96 | 9 | 1 | 2 | 0 | 3 | 2 | 5 | IR£127,965 | IR£25,108 | Sep-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 800% | 157% |
| 126 | Tipperary (N.R.) | Ballywilliam | 88-95 | 8 | 0 | 1 | 1 | 2 | | 2 | IR£15,684 | IR£18,831 | Oct-96 | 97-2000 | 4 | 0 | 0 | 2 | 2 | | 2 | IR£5,486 | IR£37,663 | 204% | -377% |
| 127 | Tipperary (N.R.) | Bushfield Junction R499 Jn | 88-95 | 8 | 0 | 0 | 2 | 2 | | 2 | IR£2,743 | IR£18,831 | Oct-96 | 97-2000 | 4 | 0 | 0 | 1 | 1 | | 1 | IR£2,743 | IR£18,831 | 0% | 0% |
| 128 | Tipperary (N.R.) | Junction at Ballywilliam Stores | 88-95 | 8 | 0 | 1 | 1 | 2 | | 2 | IR£15,684 | IR£18,831 | Oct-96 | 97-2000 | 4 | 0 | 0 | 2 | 2 | | 2 | IR£5,486 | IR£37,663 | 408% | -753% |
| 129 | Tipperary (N.R.) | Kilmastulla, R496 jcn | 88-95 | 8 | 1 | 1 | 1 | 3 | | 3 | IR£131,019 | IR£28,247 | Oct-96 | 97-2000 | 4 | 0 | 1 | 4 | 5 | | 5 | IR£39,598 | IR£94,156 | 1306% | -942% |
| 130 | Tipperary (S.R.) | Graiguepaudeen | 88-96 | 9 | 1 | 3 | 3 | 7 | 3 | 10 | IR£144,345 | IR£58,586 | Oct-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 206% | 84% |
| 131 | Waterford | Clearys Cross Junction | 88-96 | 9 | 0 | 1 | 2 | 3 | | 3 | IR£15,161 | IR£25,108 | Oct-97 | 98-2000 | 3 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 758% | 1255 % |
| 132 | Waterford | Piltown Cross Junction | 88-96 | 9 | 0 | 2 | 3 | 5 | | 5 | IR£29,102 | IR£41,847 | Oct-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 1272% | 837% |
| 133 | Waterford | Scrahan Railway Bridge | 88-96 | 9 | 0 | 2 | 3 | 5 | | 5 | IR£29,102 | IR£41,847 | Oct-97 | 98-2000 | 3 | 0 | 2 | 0 | 2 | | 2 | IR£76,335 | IR£50,217 | -157% | -28% |
| 134 | Waterford | Stone Bridge | 88-96 | 9 | 0 | 3 | 5 | 8 | | 8 | IR£44,263 | IR£66,956 | Oct-97 | 98-2000 | 3 | 0 | 2 | 5 | 7 | | 7 | IR£94,622 | IR£175,758 | -458% | -989% |
| 135 | Waterford | Well Road Junction | 88-96 | 9 | 0 | 0 | 4 | 4 | | 4 | IR£4,876 | IR£33,478 | Oct-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£2 | 5,108 | 12% |
| 136 | Waterford | Youghal Bridge | 88-96 | 9 | 0 | 1 | 4 | 5 | | 5 | IR£17,599 | IR£41,847 | Oct-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 70% | 84% |
| 137 | Westmeath | Tyrrellspass | 88-95 | 8 | | 1 | 1 | 2 | 7 | 9 | IR£15,684 | IR£18,831 | Jun-96 | 97-2000 | 4 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 523% | 628% |
| 138 | Westmeath | Ballykeeran | 88-95 | 8 | 1 | 1 | 3 | 5 | 2 | 7 | IR£133,762 | IR£47,078 | Jul-96 | 97-2000 | 4 | 0 | 1 | 4 | 5 | | 5 | IR£39,598 | IR£94,156 | 4708% | -2354 |

| Scheme Ref | Local Authority | Description | Acc Years | Tot Yrs | Fat | Ser | Min | Total PIA | Mat | Total Accs | Accident Cost, WTP Method per Annum | Accident Cost, AC Method per Annum | Completion Date | Acc Years After | Total Yrs After | Fat Aft | Ser Aft | Min Aft | Tot PIA Acc Aft | Mat Aft | Tot Accs Aft | Accident Cost, WTP Method per Annum2 | Accident Cost, AC Method per Annum3 | Savings % Per Annum, WTP Method | Savings % Per Annum, AC Method |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | % |
| 139 | Westmeath | Glasson | 88-95 | 8 | | | 5 | 5 | 5 | 10 | IR£6,858 | IR£47,078 | Aug-96 | 97-2000 | 4 | 0 | 0 | 1 | 1 | | 1 | IR£2,743 | IR£18,831 | 82% | 565% |
| 140 | Westmeath | Cloghan Cross | 88-95 | 8 | | 2 | 4 | 6 | 1 | 7 | IR£34,112 | IR£56,494 | Sep-96 | 97-2000 | 4 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 341% | 565% |
| 141 | Westmeath | Moate west/Turnpike - Church St+ Additional | 88-96 | 9 | | 4 | 5 | 9 | 16 | 25 | IR£56,986 | IR£75,325 | Jul-97 | 98-2000 | 3 | | 1 | 2 | 3 | | 3 | IR£45,482 | IR£75,325 | 31% | 0% |
| 142 | Westmeath | The Vee of the Downs, Killucan Road & crossroads | 88-96 | 9 | | 5 | 4 | 9 | 12 | 21 | IR£68,489 | IR£75,325 | Jun-97 | 98-2000 | 3 | 0 | 4 | 2 | 6 | | 6 | IR£159,985 | IR£150,650 | -610% | -502% |
| 143 | Westmeath | Fardrum Junction & additional | 88-95 | 8 | 1 | | 1 | 2 | | 2 | IR£116,707 | IR£18,831 | Jun-96 | 97-2000 | 4 | | 1 | 4 | 5 | | 5 | IR£39,598 | IR£94,156 | 1285% | -1255% |
| 144 | Westmeath | Cornamaddy School & additional | 88-97 | 10 | 0 | 0 | 4 | 4 | 4 | 8 | IR£4,389 | IR£30,130 | Mar-98 | 99-2000 | 2 | 0 | 0 | 0 | 0 | | 0 | IR£0 | IR£0 | 13% | 91% |
| 145 | Westmeath | Junction N6/N52 Kilbeggan | 88-95 | 8 | | 1 | 4 | 5 | 7 | 12 | IR£19,799 | IR£47,078 | Nov-96 | 97-2000 | 4 | 0 | 3 | 0 | 3 | | 3 | IR£85,877 | IR£56,494 | -1322% | -188% |
| 146 | Westmeath | N6 Junctions | 88-97 | 10 | 3 | 1 | 11 | 15 | | 15 | IR£300,324 | IR£112,988 | Nov-98 | 99-2000 | 2 | 0 | 1 | 1 | 2 | | 2 | IR£62,738 | IR£75,325 | 1440% | 228% |
| 147 | Westmeath | N4 Junctions, Ballinaleck to Portnashangan, 4 jns. on the route | 88-97 | 10 | 1 | 10 | 15 | 26 | | 26 | IR£223,229 | IR£195,845 | Nov-98 | 99-2000 | 2 | 0 | 0 | 5 | 5 | | 5 | IR£27,430 | IR£188,313 | 1350% | 52% |
| 148 | Wicklow | Cullenmore bends | 88-97 | 10 | 1 | 8 | 16 | 25 | | 25 | IR£201,426 | IR£188,313 | Nov-97 | 98-2000 | 3 | 0 | 2 | 2 | 4 | | 4 | IR£83,650 | IR£100,433 | 785% | 586% |
| 149 | Wicklow | Dublin road Arklow | 88-97 | 10 | 2 | 2 | 4 | 8 | 3 | 11 | IR£211,825 | IR£60,260 | Nov-97 | 98-2000 | 3 | 0 | 0 | 1 | 1 | | 1 | IR£3,657 | IR£25,108 | 10408% | 1758% |
| 150 | Wicklow | Rosscath - Tap | 88-97 | 10 | 1 | 7 | 14 | 22 | 7 | 29 | IR£187,781 | IR£165,715 | Nov-97 | 98-2000 | 3 | 2 | 0 | 5 | 7 | | 7 | IR£633,407 | IR£175,758 | -5570% | -126% |
| 151 | Wicklow | Willowgrove/ Delgany Junction | 88-97 | 10 | 1 | 1 | 7 | 9 | 11 | 20 | IR£111,399 | IR£67,793 | Nov-97 | 98-2000 | 3 | 1 | 0 | 2 | 3 | | 3 | IR£314,875 | IR£75,325 | -2713% | -100% |
| | | | | | | | | | | | £14,581,056 | £8,697,109 | | | | | | | | | | £7,117,445 | £7,695,705 | | |

# 3. Appendix: Problem and Solution Description

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 1 | Carlow | Ballon Village | Speed, Too Wide. | Single Vehicle, Sideswipe, Right turning in, Sideswipe | Edge Lines, Channelisation, Width Reduction, Traffic Calming, Rumble Areas | Traffic Calming | 623.39% | 234.34% |
| 2 | Carlow | Carrickduff, Bunclody | Too Wide | Sideswipe, Right turning in, Overtaking, Mixed | Footpath, Cycleway, Channelisation, Width Reduction, Traffic Calming, Rumble Areas | Traffic Calming | 541.76% | -390.57% |
| 3 | Carlow | Greenlane | Very busy, Too wide | Pedestrian, Sideswipe, Right turning in, Overtaking | Rumble Areas, Width Reduction | Traffic Calming | 4996.69% | 167.39% |
| 4 | Carlow | Millford Cross | Speed, Difficult Junction, Overtaking/Right turn in | Sideswipe, Right turning in (Incl O/Taking), Rear End | Channelisation, Right Turn Lane | RTL | -30.48% | -209.24% |
| 5 | Carlow | Wallsforge | Markings, Lighting, Speed, Riding Quality, Layout, Difficult unction, Poorly Defined, Sight Distance(poor), | Head-on (O_taking), Sideswipe( Incl O/Taking), Overshoot | Centre Line, Renew or Upgrade Markings, Rumble Areas | Lining | 1952.87% | -502.17% |
| 6 | Clare | Ballycasey and Hurlers Cross | Speed / Right turn out | Mixed | Flashing warning signs, Speed limit | Flashing warning signs | -85.17% | -29.42% |
| 7 | Clare | Limerick Road, Clareabbey, Ennis | Too wide, Markings, Overshoot | Right turning in (Incl O/Taking), Mixed | Do not pass signs, Rt turn lane, Channelisation, Surface | Chanelisation | 838.25% | 327.50% |
| 8 | Clare | Shannon Town Old Lodge Junction | Rt turn in, Too narrow | Rt turn in | Width inc, Rt turn lane, studs | RTL | 18.76% | 128.76% |
| 9 | Cork North | Ballymaquirke Cross, Kanturk, R579 jcn | Overshoot | | Warning signs, Layout | Signing | 318.06% | 209.24% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 10 | Cork North | Coole Junction | | A8 conflict warrant | Warning signs, A.D. signs | Signing | 0.00% | 0.00% |
| 11 | Cork North | Cullen School, Lislehane | | A8 conflict warrant | Warning signs | Signing | 0.00% | 0% |
| 12 | Cork North | Daly's Cross | Sight distance | | A.D. signs, Warning signs, Centre lines, Sight distance | Sight Distance | 0.00% | 0.00% |
| 13 | Cork North | Eelweir Cross | | Sideswipe, Right turning in (Incl O/Taking), Conflict warrant | S1 A.D. signs, Warning signs, Centre lines, Edge lines, Delineators | Signing, Lining | 22.86% | 156.93% |
| 14 | Cork North | Firville Cross Roads | Speed | Single Vehicle, Head-on (O_taking) | Warning signs, Edge lines, Delineators, Channelisation | Channelisation | 778.69% | 269.02% |
| 15 | Cork North | Hospital Cross, Mallow | Layout | Single Vehicle, | Rear end Warning signs /, Rt turn lane | RTL | 477.10% | 313.85% |
| 16 | Cork North | Kilmagner School, Fermoy | | A8 conflict warrant | Warning signs, Ped barriers | Signing | 0.00% | 0.00% |
| 17 | Cork South | Blacksticks | Layout | Rear end, Head on | Realign jcn | Layout | -94.25% | 1129.88% |
| 18 | Cork South | Carrigshane | Speed | Rear end /loss of control | Flashing Signs , Warning signs, Rt turn lane | RTL | 477.10% | 313.85% |
| 19 | Cork South | Churchtown North | Sight distance | Loss of control | Sight lines, Upgrade markings, Warning signs, Chevrons, Dble cl w studs, Ddge lines | Sight Distance | -129.41% | 0.00% |
| 20 | Cork South | Hilltown | Right turn in | Rear end | Rt turn lane | RTL | 431.38% | 0.00% |
| 21 | Cork South | Knockmullane east of Inishannon | Poorly defined jcn | Rear end | Channelisation | Channelisation | 286.26% | 188.31% |
| 22 | Cork South | Met-Con Junction | Poorly defined jcn, Sight distance | Rear end, Head on | Rt turn lane, Sight lines | Sight Distance | -1965.58% | 376.63% |
| 23 | Cork South | Pedlar's Cross | Blackspot | Rear end /loss of control | Centreline, Surface, Edge lines | Signing, Lining, Skid Resistance | 5213.35% | 941.56% |
| 24 | Donegal | Assaroe Rd. Ballyshannon | Very Busy, Wide | Single Vehicle, Sideswipe( Incl O/Taking), Rear End | Chanelisation, Right Turn Lane | Channelisation | 1045.98% | 424.54% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 25 | Donegal | Ballybofey, Main St. | No crossing | Pedestrian, Sideswipe( Incl O/Taking), Rear End | Zebra Crossing | Ped Crossing | 2353.83% | -7532.50% |
| 26 | Donegal | Ballybulgan | Bends | Pedestrian, Head-on | Chevrons | Signing | 2323.61% | 2789.82% |
| 27 | Donegal | Bridgend | Sight distance poor | A1 (high risk) | Chanelisation | Channelisation | -2199.88% | -5230.90% |
| 28 | Donegal | Bundoran Pedestrian Crossing | No crossing | Pedestrian | Pedestrian Crossing | Ped Crossing | -128.55% | 104.62% |
| 29 | Donegal | Burt Junction | Right turn in | Rear end/Side impact | Right Turn Lane | RTL | 1104.86% | 0.00% |
| 30 | Donegal | Castlefinn | Speed | Pedestrian, Rear End | Traffic Calming, Pay for design | Traffic Calming | 938.99% | 627.71% |
| 31 | Donegal | Croaghan Heights-Lifford | Speed | A1 & cyclist | Chanelisation | Traffic Calming | 464.72% | 557.96% |
| 32 | Donegal | Drumkeen | Busy. (pedestrians) | A1 (high risk) | Traffic Calming, pay for design | Traffic Calming | 139.42% | 167.39% |
| 33 | Donegal | Dry Arch RaB | Overtaking/Right turn in | Sideswipe, Right turning in (Incl O/Taking), Sideswipe( Incl O/Taking), Rear End | Chanelisation | Channelisation | 1339.34% | 803.47% |
| 34 | Donegal | Finner Rd Bundoran | Very Busy | Single Vehicle, Sideswipe( Incl O/Taking) | Traffic Calming, pay for design | Traffic Calming | -598.45% | -991.12% |
| 35 | Donegal | Galdonagh Junction | Right turn in | Sideswipe, Right turning in (Incl O/Taking) | Signing | Signing | 109.72% | 753.25% |
| 36 | Donegal | Griannan Junction | Right turn in | Rear end/Side impact | Signs | Signing | 6902.07% | 0.00% |
| 37 | Donegal | Junctions at 0219 and 0186 | Right turn in, Right turn out | Sideswipe( Incl O/Taking) | Upgrade signs | Signing | 51676.28% | 6277.08% |
| 38 | Donegal | Kilross | Alignment Poor | Mixed | Chevrons/Markings/Studs | Signing | 7755.59% | 460.32% |
| 39 | Donegal | Liscooley-Raphoe Junction | Signs, Bendy, Very Busy | Sideswipe( Incl O/Taking), Pedestrian (high risk) | Upgrade signs | Signing | 0.00% | 0.00% |
| 40 | Donegal | Lurgybrack | Overshoot | Overshoot | Other, Sand Trap | Sand Trap | 6.53% | 44.84% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 41 | Donegal | Manor Junction | Lighting | Mixed | Lighting/Signs | Lighting and planting | 3457.50% | -107.61% |
| 42 | Donegal | Sligo Rd. Tullaghan | Right turn in, Very Busy, Accidents Involve Overtaking | Sideswipe, Right turning in (Incl O/Taking), Sideswipe( Incl O/Taking) | "Do Not Pass", Right Turn Lane | Traffic Calming | 361.32% | 738.48% |
| 43 | Donegal | Trenamullin | Bendy, Sight Distance Poor | Single Vehicle, Head-on (O_taking) | Upgrade signs, | Chevrons Signing | 2120.43% | 1394.91% |
| 44 | Donegal | Trimragh Junction | Layout | Sideswipe, Right turning out (Incl O/Taking) | Layout | Layout | 652.02% | 209.24% |
| 45 | DunLaoghaire / Rathdown | Booterstown Avenue Jn. | Markings | Head-on (O_taking), Rear End | Renew or Upgrade Markings | Lining | 119.68% | -1434.76% |
| 46 | DunLaoghaire / Rathdown | Bray Road/Kill Lane | Surface | Overshoot/ Loss of control | Surface, improve skid resistance | Skid Resistance | 64.75% | -119.56% |
| 47 | DunLaoghaire / Rathdown | Clonkeen Road Jn. | Markings | Sideswipe, Right turning in (Incl O/Taking), Rear End | Renew or Upgrade Markings | Lining | 25235.96% | -1673.89% |
| 48 | DunLaoghaire / Rathdown | Johnstown Road Jn. | Signs | Pedestrian, Rear End | Renew or Upgrade Markings | Signing, Lining | 487.64% | 3347.78% |
| 49 | DunLaoghaire / Rathdown | Loughlinstown Roundabout | Overshoot | Loss of control | Renew or Upgrade Markings | Signing, Lining | 1648.27% | -1115.93% |
| 50 | DunLaoghaire / Rathdown | Mount Merrion Ave | Surface | Pedestrian, Sideswipe, Right turning in (Incl O/Taking) | Renew or Upgrade Markings | Signing, Lining | -98.33% | 760.86% |
| 51 | DunLaoghaire / Rathdown | Wyattville Dual Carriageway | Signs | Mixed | Renew or Upgrade Markings | Signing, Lining | 182.87% | 1255.42% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 52 | Galway | Fureys Cross | Sight Distance, poor | Sideswipe, Right turning in (Incl O/Taking), Rear End | "Do Not Pass", Double 12M c/c Centre Line and Stud | Signing, Lining | 4791.01% | 334.78% |
| 53 | Galway | Glenbrack, Gort | Speed, Difficult Bend | Loss of control | Flashing Warning Signs, Rumble Strips | Flashing warning signs | 0.00% | 0.00% |
| 54 | Galway | Kilcolgan | Speed, Layout | Sideswipe, Right turning in (Incl O/Taking) | Chanelisation | Channelisation | 796.21% | -223.19% |
| 55 | Galway | Knockdoe | Speed, Overtaking/Right turn in | Sideswipe, Right turning in (Incl O/Taking) | "Do Not Pass", Double 12M c/c Centre Line and Stud | Signing, Lining | -6213.72% | -2510.83% |
| 56 | Galway | Meadow Court , Loughrea | Speed, Overtaking/Right turn in | Sideswipe, Right turning in (Incl O/Taking) | "Do Not Pass", Double 12M c/c Centre Line and Stud | Signing, Lining | 946.32% | 301.30% |
| 57 | Galway | Peterswell | Sight Distance, poor | Sideswipe( Incl O/Taking) | Sight Distance | Sight Distance | 12.19% | 83.69% |
| 58 | Galway | Weir Rd. Kilcolgan | Speed, Overtaking/Right turn in | Sideswipe, Right turning in (Incl O/Taking), Rear End | "Do Not Pass", Double 12M c/c Centre Line and Stud | Signing, Lining | -121.91% | -836.94% |
| 59 | Kerry | Ballydwyer Cross | Markings, Poorly defined junction | Mixed | Warning signs, double centre lines & studs, Edge lines, Rumble strips | Rumbles | 1412.32% | -239.13% |
| 60 | Kerry | Ballyegan Quarry | Poorly defined junction, Sight distance | Pedestrian, Single Vehicle, Head-on (O_taking) | Double centre lines & studs, Edge lines , Rumble strips | Rumbles | 1311.43% | -167.39% |
| 61 | Kerry | Camp Cross | Sight Distance, Poor | Pedestrian, Head-on (O_taking), Rear End | A.D. signs, warning signs, centre lines, studs, layout | Layout | 419.25% | 76.09% |
| 62 | Kerry | Kilmaniheen West | Bendy, too narrow | Pedestrian, Head-on (O_taking), Rear End | Centre lines & studs, edge lines, warning signs, Chevrons | Signing, Lining | 685.15% | 41.85% |
| 63 | Kerry | Leamnaguilla | Deceptive bend | Single Vehicle, Head-on (O_taking) | Warning signs, Chevrons | Signing | 784.61% | -2510.83% |
| 64 | Kerry | Raleigh | Bendy, too narrow | Single Vehicle | Warning signs, Chevrons | Signing | 3689.43% | 669.56% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 65 | Kerry | Urrohogal, Moriarty's Cross | Sight distance | Mixed | Warning signs, Chevrons, Centre line, Edge lines | Signing, Lining | 435.76% | -167.39% |
| 66 | Kilkenny | KnockWilliam Bridge, Ballyhale | Surface, markings, speed, Difficult Bend | Loss of control/Head-on | Chevrons, upgrade signs, 6M Studs, Renew or Upgrade Markings, | Surface Skid Resistance | -33.85% | -119.56% |
| 67 | Kilkenny | Near Jn. N24 Granny Junction | Surface | Loss of control in wet | Improve Skid resistance | Skid Resistance | 189.33% | 45.49% |
| 68 | Laois | Attanagh | Markings, signs, Alignment Poor, poor sight distance | Sideswipe, Right turning in (Incl O/Taking) | Sight Distance/Markings/Signs | Signing, Lining, Sight Distance | 1961.35% | 557.96% |
| 69 | Laois | Ballickmoyler | Markings, poor sight distance | Loss of control/Head-on | Signs/Markings/Studs/ Chevrons/Sight Distance | Signing, Lining, Sight Distance | 1312.89% | 1115.93% |
| 70 | Laois | Ballinakill Jnct. | Sight Distance Poor, Too wide | Head-on | Signs/Markings/Studs | Signing, Lining | 27.09% | 185.99% |
| 71 | Laois | Boughlane, Portlaoise, at Lewis Garage | Speed, Bendy, Too Wide | Loss of control/Head-on | Signs/Markings/Traffic Management | Channelisation | 2044.66% | 717.38% |
| 72 | Laois | Cloonaghadoo 1 | Difficult Bend | Loss of control/Head-on | Signs/Lines/Studs | Signing, Lining | 622.51% | -239.13% |
| 73 | Laois | Cloonaghadoo 2 | Poorly defined junction, Sight distance | Loss of control/Head-on | Signs/Lines/Studs | Signing, Lining | 5762.13% | 836.94% |
| 74 | Laois | Jamestown Junction | Speed, Sight Distance, poor, too narrow | Pedestrian, Loss of control/Head-on | Signs/Markings/Studs | Signing, Lining | 2609.80% | 0.00% |
| 75 | Laois | Killenure | Markings, Lighting, R-turn in | Mixed | Signs/Markings/Studs/ Surface | Signing, Lining, Skid Resistance | 743.50% | 107.99% |
| 76 | Laois | Moneyquid/Quarry mount | Alignment Poor, Bendy | Loss of control | Chevrons/Signs/Markings | Signing, Lining | 557.67% | 669.56% |
| 77 | Laois | Newtown Cross | Markings, Signs, Poorly defined | Head-on, Sideswipe, Right turning in (Incl O/Taking) | Signs/Markings/Studs | Signing, Lining | -505.36% | -836.94% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 78 | Laois | Oakvale, Stradbally | Speed, Difficult junction, Sight distance poor, Difficult bend | Single vehicle | Chevrons, upgrade signs, 6M Studs, Renew or Upgrade Markings, Rumble Area | Rumbles | 508.90% | 334.78% |
| 79 | Laois | Sluggarey | Speed, Difficult Junction | Rear End | Upgrade signs, Rumble area | Rumbles | 2502.04% | -209.24% |
| 80 | Leitrim | Annaduff | Speed, Difficult Junction | Pedestrian | Traffic Calming Lighting | Traffic Calming | 297.25% | 104.62% |
| 81 | Limerick | Clarina Village | Lighting poor, poor layout | Mixed | Warning signs /, Centre line , Edge lines, Footpaths / Lighting | Traffic Calming | 179.42% | 46.50% |
| 82 | Limerick | Fennessey's Bend | Surface poor, deceptive bend | Single vehicle, Loss of control | Skid surface , Warning signs | Signing, Lining, Skid Resistance | -1862.22% | 334.78% |
| 83 | Longford | Aghnaskea (Killashee Village) | Alignment poor, Too narrow | Head on /loss of control | Warning signs (fluorescent background) , Centre line | Signing, Lining | -1307.27% | 502.17% |
| 84 | Longford | Carrickboy Crossroads | Poorly defined junction | Mixed | Warning signs, edge lines, centre lines, delineators , skid surface, sght distance | Signing, Lining, Sight Distance | 39.19% | 269.02% |
| 85 | Longford | Dublin Road Edgeworthstown | Difficult bend, sight distance | M ixed | Edge lines, Centre lines | Lining | 1547.20% | 941.56% |
| 86 | Longford | Goshen Jn. | Overtaking, Rt turn in | Sideswipe, Rt turn in | Acc & dec lanes, warning signs, delineators, centre lines & studs | Channellisation | 152.98% | -282.47% |
| 87 | Longford | Lissardowlan | Speed | Mixed | Warning signs (fluorescent background) /, Centre lines , Delineators | Signing, Lining | 235.38% | -753.25% |
| 88 | Longford | Minard Jn.(Knockmartin Lane) | Poorly defined junction | Sideswipe | Warning signs (fluorescent background), centre lines , delineators | Signing, Lining | 1440.53% | 313.85% |
| 89 | Longford | Newtownforbes Village | P31 | loss of control | Warning signs (fluorescent background), centre lines, skid surface | Signing, Lining, Skid Resistance | 13.13% | -502.17% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 90 | Louth | Castlebellingham Village | Speed ,Bendy | Pedestrian, Sideswipe, Right turning in (Incl O/Taking), rear end, mixed | Traffic Calming | Traffic Calming | 415.67% | 188.31% |
| 91 | Louth | Collon | Speed | Pedestrian, Single veh, Sideswipe( Incl O/Taking) | Traffic calming (Completion of work from Programme 1) | Traffic Calming | 570.36% | 0.00% |
| 92 | Louth | Kilsaran Village | Right turn in, Pedestrians | Pedestrian, Right turning in (Incl O/Taking) | Right Turn Lane, traffic calming | Traffic Calming | 653.35% | 20.92% |
| 93 | Louth | Sheepgrange Cross | Markings, signs, speed, bendy | Single Veh, Head-on (O_taking) | "Do Not Pass", Surface | Signing, Lining, Skid Resistance | -1979.35% | -171.19% |
| 94 | Mayo | Ballygowan, Brickeens | Markings, signs, speed, bendy | Single Veh | Signs, Lines, Upgrade markings | Signing, Lining | -1693.11% | -83.69% |
| 95 | Mayo | Ballyhean | Speed, bendy | Single Veh | Chevrons, Double 6M c/c Centre Line and Stud | Signing, Lining | -2899.61% | -585.86% |
| 96 | Mayo | Ballyvary | Speed | Sideswipe, rt turn in | Traffic Calming | Traffic Calming | 1377.18% | 920.64% |
| 97 | Mayo | Clonkeen, Cloggernagh | Poorly Defined | Mixed | Chevrons, Double 6M c/c Centre Line and Stud, Flashing Warning Signs | Signing, Lining | 2104.48% | -251.08% |
| 98 | Mayo | Coolcran, Ballina-Crossmolina road Crossmolina | Speed, Poorly Defined, bendy | Mixed | Upgrade signs, 6M c/c Centre Line and Stud, Surface | Signing, Lining, Skid Resistance | 1650.18% | 502.17% |
| 99 | Mayo | Culmore Swinford. | Speed, Poorly Defined, bendy | Head-on (O_taking) | Signs, Lines, Upgrade markings | Signing, Lining | 139.42% | 167.39% |
| 100 | Mayo | Devlis, Coolnafarna | Very Busy, Accidents Involve Pedestrian | A1 Pedestrian | Crossing/Lines/Signs/Foot paths | Signing, Lining | 1098.35% | 585.86% |
| 101 | Mayo | Manulla | Speed, Poorly Defined, bendy | Single Veh | Signs, Lines, Upgrade markings | Signing, Lining | 90.65% | -167.39% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 102 | Mayo | Mulranny | Bendy, Too narrow | Rear End | Markings, Signs, Improve sight distance | Signing, Lining, Sight Distance | 369.49% | 167.39% |
| 103 | Mayo | Sonnagh | Layout, Bendy | Single Veh, Sideswipe, Right turning in (Incl O/Taking) | Chevrons, Markings, Signs | Signing, Lining | 843.60% | -79.71% |
| 104 | Meath | Blackbull Cross | Markings, Signs, Overtaking | Head-on (O_taking)at Trim Jnc | Channelise minor road/Signs/Markings | Signing, Lining | -178.91% | -117.70% |
| 105 | Meath | Carnaross | Speed | Mixed | Traffic Calming | Traffic Calming | 559.39% | 0.00% |
| 106 | Meath | Colpe Cross | Markings, Signs | Pedestrian, Rear End | Markings/Signs/Stop Lines/Solid CL | Signing, Lining | -294.23% | 941.56% |
| 107 | Meath | Glassallen | Gradient | Single Veh, Loss of control | Upgrade signs, Impact Attenuators | Crash barrier | -2675.64% | 125.54% |
| 108 | Meath | Lynch's Cross | Overshoot Acidents | A4 | Layout/Visual appearance/Signs/Markings/Channelisation | Channelisation | 276.71% | 376.63% |
| 109 | Meath | Mosney Jnct. | Marking, Signs, Overtaking | Head-on (O_taking), Sideswipe, Right turning in (Incl O/Taking), Rear End | Delineators/Right turn In Lane/Signs/Markings/Stop Line | Channelisation | 932.84% | 792.89% |
| 110 | Meath | Rathdrinagh Cross | Markings, Signs, Layout | Head-on (O_taking), Rear end | Surface/Double CL/Signs/Markings/Chevrons/Kerbing/Layout/ Channelise | Channelisation | 1185.84% | 72.43% |
| 111 | Meath | Ross Cross | Markings, Signs | Sideswipe, Right turning in (Incl O/Taking), Rear End | Double CL/Signs/Markings | Signing, Lining | 3324.72% | -1176.95% |
| 112 | Meath | Slane Bridge | Surface | Single Veh, with Bridge | Surface/Impact attenuator | Crash barrier | -254.17% | -519.48% |
| 113 | Roscommon | Abbey N.S.Roscommon | Speed | A1 pedestrian | Flashing warning signs | Flashing warning signs | 2437.39% | -334.78% |
| 114 | Roscommon | Arm | Difficult bend | Single Veh, Loss of control | Surface, Warning signs, Centre line & studs, Pedestrian barriers | Signing, Lining, Skid Resistance | 67.35% | 44.31% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 115 | Roscommon | Ballinphuill | Poorly defined junction, Sight distance poor | Single Veh, Loss of control | Sight distance, Centre line, Edge lines, Finger post signs | Signing, Lining, Sight Distance | 1318.11% | 107.61% |
| 116 | Roscommon | Ballybay | Layout | Conflict warrant | Rt turn lane | RTL | 0.00% | 0.00% |
| 117 | Roscommon | Ballyleague | Difficult Bend | Single Veh, Loss of control | Chevrons, Centre line & studs , Edge lines, Surface | Signing, Lining, Skid Resistance | 47.02% | 322.82% |
| 118 | Roscommon | Bellanagare N.S. | Speed | Conflict warrant | Flashing warning signs | Flashing warning signs | 254.45% | 167.39% |
| 119 | Roscommon | Carrick N.S. | Speed | Conflict warrant | Flashing warning signs | Flashing warning signs | 272.89% | 451.95% |
| 120 | Roscommon | Drum Jn | Poorly defined junction, Overtaking, rt turn in | Rt turn in | Rumble strips, Channelisation with cylinders | Channelisation | 4036.61% | 836.94% |
| 121 | Roscommon | Frenchpark | Sight distance poor | Pedestrian | Instate temporary solution permanently , Width reduction, Stop line forward | Traffic Calming | -348.29% | 451.95% |
| 122 | Roscommon | Mount Talbot N.S. | Speed | Conflict warrant | Flashing warning signs | Flashing warning signs | 0.00% | 0.00% |
| 123 | Roscommon | Oran | Speed /Loss of control | Single Veh | Surface, Warning signs, Centre line & studs, Delineators, Layout | Signing, Lining, Skid Resistance | 84.82% | 55.80% |
| 124 | Roscommon | Strokestown Convent | Speed | Conflict warrant | Flashing warning signs | Flashing warning signs | -687.02% | -451.95% |
| 125 | Sligo | Cullagh Beg, Drumcliff | Sight Distance, poor | Head-on (O_taking), Rear End | Sight Distance | Sight Distance | 799.78% | 156.93% |
| 126 | Tipperary (N.R.) | Ballywilliam | Poorly defined junction | Rear End | Lines & studs, Warning signs moved | Signing, Lining | 203.97% | -376.63% |
| 127 | Tipperary (N.R.) | Bushfield Junction R499 jcn | Difficult junction | Mixed | Widen road, Rt turn lane (short) | RTL | 0.00% | 0.00% |
| 128 | Tipperary (N.R.) | Junction at Ballywilliam Stores | Poorly defined junction | Rear End | Lines & studs, warning signs moved | Signing, Lining | 407.94% | -753.25% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 129 | Tipperary (N.R.) | Kilmastulla, R496 jcn | Difficult junction, Too narrow | Sideswpe overtking ,Rt turn in, Rear end | Widen road, Rt turn lane, A.D. signs | RTL | 1306.02% | -941.56% |
| 130 | Tipperary (S.R.) | Graiguepaudeen | No Hard Shoulder, no hard shoulder, layout | Rear End | Renew or Upgrade Markings, width increase | Layout | 206.21% | 83.69% |
| 131 | Waterford | Clearys Cross Junction | Markings, Right turn in | Sideswipe, Right turning in (Incl O/Taking), Rear End | Upgrade signs, Renew or Upgrade Markings | Signing, Lining | 758.04% | 1255.42% |
| 132 | Waterford | Piltown Cross Junction | Sight Distance, poor, Right turn in | Sideswipe, Right turning in (Incl O/Taking), Rear End | Sight Distance, Rt Turn Lane | RTL | 1272.26% | 836.94% |
| 133 | Waterford | Scrahan Railway Bridge | Surface, Signs, Speed | Head-on (O_taking) | Chevrons, Rumble Strips, Surface | Signing, Lining, Skid Resistance | -157.44% | -27.90% |
| 134 | Waterford | Stone Bridge | Markings, Signs, Speed | Single Veh, Head-on (O_taking) | Upgrade signs signs, Renew or Upgrade Markings | Signing, Lining | -457.81% | -989.12% |
| 135 | Waterford | Well Road Junction | Sight Distance, poor, Overshoot Accidents | Single Veh, Head-on (O_taking) | Chevrons, Sight Distance | Sight Distance | 12.19% | 83.69% |
| 136 | Waterford | Youghal Bridge | Markings, Signs, Speed | Single Veh, Head-on (O_taking) | Upgrade signs, Renew or Upgrade Markings | Signing, Lining | 69.71% | 83.69% |
| 137 | Westmeath | Tyrrellspass | Difficult junction | Mixed | Layout | Layout | 522.81% | 627.71% |
| 138 | Westmeath | Ballykeeran | Speed | Single veh | Warning signs, centre line, edge lines | Signing, Lining | 4708.23% | -2353.91% |
| 139 | Westmeath | Glasson | Speed | Mixed | Surface, Centre line & studs, Delineators | Signing, Lining, Skid Resistance | 82.29% | 564.94% |
| 140 | Westmeath | Cloghan Cross | Sight distance | Sideswipe, Rt turn in | Layout (stagger), Centre line, Edge lines, Sight distance | Layout | 341.12% | 564.94% |
| 141 | Westmeath | Moate west/Turnpike - Church St & Additional | Speed, Overtaking | Mixed | Traffic calming | Traffic calming | 31.09% | 0.00% |

| Scheme Ref | Local Authority | Description | Problem Type | Collision Type | Solution, Description | Short Solution Description | Savings % Per Annum, Whole | Savings % Per Annum, Average |
|---|---|---|---|---|---|---|---|---|
| 142 | Westmeath | The Vee of the Downs, Killucan Road & crossroads | Layout poor, Markings poor, Sight distance | Rt turn in, Rear end | Layout, Sight distance | Sight Distance | -609.97% | -502.17% |
| 143 | Westmeath | Fardrum Junction & additional | Poorly defined junction | Conflict warrant | Width reduction, Stop line forward /Splitter islands | Layout | 1285.15% | -1255.42% |
| 144 | Westmeath | Cornamaddy School & additional | Speed | Rt turn in, Rear end | Flashing warning signs, Warning signs, Width reduction, Channelisation | Channelisation | 13.30% | 91.30% |
| 145 | Westmeath | Junction N6/N52 Kilbeggan | Sight distance | Mixed | Width increase, Footway | Layout | -1321.57% | -188.31% |
| 146 | Westmeath | N6 Junctions | Layout | Head on, Rear End | Renew or Upgrade Markings, Chanelisation | Channelisation | 1439.92% | 228.26% |
| 147 | Westmeath | N4 Junctions, Ballinaleck to Portnashangan, 4 jns. on the route | Layout | Head on, Rear End | Renew or Upgrade Markings, Chanelisation | Channelisation | 1350.34% | 51.95% |
| 148 | Wicklow | Cullenmore bends | Too Narrow, Sight Distance, Poor | Single Veh, Head-on (O_taking) | Chevrons, Upgrade signs, 6m Studs | Signing, Lining | 785.17% | 585.86% |
| 149 | Wicklow | Dublin road Arklow | Signs, Markings | Pedestrian, Rear end | Signs/Markings/Mirror | Signing, Lining | 10408.40% | 1757.58% |
| 150 | Wicklow | Rosscath - Tap | Sight Distance Poor, Too narrow | Single Veh, Head-on (O_taking) | Edge Studs/Signs | Signing, Lining | -5570.32% | -125.54% |
| 151 | Wicklow | Willowgrove/Delgany Junction | Signs, Markings | Sideswipe, Right turning in (Incl O/Taking) | Signs/Markings | Signing, Lining | -2713.01% | -100.43% |