



Donegal County Council

Policy on the consideration of hazardous locations on the road network for low cost remedial works

Developed by: Roads & Transportation
Strategic Policy Committee



Policy Adopted by Donegal County Council on: 28/11/05
Policy to Come into Operation on: 28/11/05



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POLICY ON THE CONSIDERATION OF HAZARDOUS LOCATIONS ON THE ROAD NETWORK FOR LOW COST SAFETY WORKS

1. Introduction

Donegal County Council has been implementing a programme of low cost safety improvement works on both national and non-national roads for the last number of years. One study, carried out by the NRA, reviewing the 168 schemes completed in 1994 & 1995 has shown a 20% annual reduction in numbers of collisions after treatment. A separate study by TMS consultancy reviewing different types of low cost safety improvement works in England has shown percentage reduction in casualties per scheme of between 13% and 67% with an average reduction of 34% at an average cost of £12,600 (€18,900). The evidence shows that these schemes have a positive impact on the road network and are vital in reducing the numbers of casualties on our roads. With additional funding being made available from development charges and the County Councils own resources, this policy seeks to clarify the manner in which hazardous locations will be considered for funding of low cost safety works.

2. Statement of Policy

The Council will endeavor to improve safety on our roads by identifying locations on the road network with treatable collision problems and by implementing remedial works to eliminate or manage the hazardous occurrences under the available low cost remedial works funding mechanisms. This policy will clarify the procedure for the consideration of hazardous locations on the road network and the prioritization of schemes for the available funding mechanisms.

3. Steps to be taken by Council to Support the Policy

Donegal County Council will take the following steps to support its Policy on the treatment of hazardous locations on the road network:



- a) The Council's Road Design Office will be tasked with managing information in relation to accident statistics, assessment of hazardous locations and identification of appropriate solutions on Non-National Roads, and preparation and submission of applications for NRA and DoELG funding for Low Cost Accident Measures.
- b) The Council's Road Design Office will maintain a database of reported collisions on the road network within the County of Donegal, based on the Garda's CT68 forms.
- c) Road Design will actively interrogate its collision database to find locations which meet the criteria, preferred by DoELG and NRA, for low cost accident remedial works funding (DoELG criteria are set out in Appendix A, NRA criteria are set out in Appendix B).
- d) Road Design will consider other locations with safety concerns brought to its attention by the Garda, the elected members and members of the public. In the first instance these sites should be brought to the attention of the local Area Engineer, who shall then forward same to Road Design for consideration.
- e) Road Design will compare the collision history (five year history for DoELG and NRA applications) of each location and rank them in order of cost benefit. The measure for cost benefit shall be first year rate of return, which shall be determined by the method described in "A Guide to Road Safety Engineering in Ireland (DoE 1996, or any subsequent revision)". This method is shown in Appendix D. The likely benefit that will be achieved from implementing the proposed measures shall be derived from studies into the performance of past similar works. A table of the likely outcomes is attached as Appendix E.
- f) In order to achieve the maximum level of external funding, Road Design will select the maximum number of sites permitted per application on both Non-National Roads and National Roads. The sites selected will be those that are most likely to be funded by the DOELG and the NRA respectively. This will include the top ranked national route site and the top ranked Non-National route site from each electoral



area. The remainder of the sites shall be the highest county wide ranked National and Non-National sites. Where possible each site shall meet the minimum criteria preferred by the DoELG and the NRA.

- g) Council will liaise with the NRA road safety team on both NRA and DoELG (as required by the NRA and DoELG conditions for funding see Appendix A and B) applications for low cost remedial works funding.
- h) Council will consider schemes that have been unsuccessful in the application for DoELG and NRA funding, for funding from own resources (see Appendix C). Projects will first be considered for funding from available development charges and then from the road traffic safety fund, subject to provision being made for this in the Council's annual budget. Details of the selection process and funding opportunities are displayed in the flow charts attached in Appendix G and H.
- i) Council will consider schemes that have been unsuccessful in the consideration for DoELG, NRA and available development charges funding, for funding from the road traffic safety fund, subject to provision being made for this in the Council's annual budget.
- j) Road Design will perform a safety audit of all completed remedial works and monitor the on going performance of the works at reducing casualties on our roads. Sample record sheet tracking the schemes progress is attached in Appendix G. A record of safety audits shall be maintained in the Road Design office.

4. Policy Recommendations and Approvals



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- 4.1 This Policy on the consideration of hazardous locations on the road network for low cost safety works has been approved by the Roads & Transportation Strategic Policy Committee as a recommendation to be presented to the Corporate Policy Group for approval on:

28th June 2005
(Date that Roads SPC Approved the Policy Recommendation)

- 4.2 This Policy on the consideration of hazardous locations on the road network for low cost safety works has been approved by the Corporate Policy Group as a recommendation to be presented to Council for adoption on:

25th July 2005
(Date that CPG Committee Approved the Policy Recommendation)

- 4.3 This Policy on the consideration of hazardous locations on the road network for low cost safety works has been adopted by the full Council at the full Council Meeting on:

26th September 2005
(Date that full Council Adopted the Policy)

- 4.4 The Meeting Minutes from the Meeting Adopting this Policy on the consideration of hazardous locations on the road network for low cost safety works have been adopted by the full Council at the Council Meeting on:

28th November 2005
(Date that full Council Adopted the Meeting Minutes which Adopted the Policy)

Date Policy Adopted by Donegal County Council: 28th November 2005

Date Policy to Come into Operation: 28th November 2005



APPENDIX “A”

DoELG CRITERIA PREFERED FOR LOW COST SAFETY SITES

The DoELG will consider five to ten locations for funding per annum. These should be the sites that exhibit the greatest promise of accident reduction and ranked in benefit to cost ratio.

The DoELG favour single site locations over road lengths, as single site locations lend themselves better to remedial measures and are therefore more successful in receiving funding. The DoELG favour schemes costing between €2,000 and €30,000

Each location should have a minimum of three personal injury collisions in rural areas, and five personal injury accidents in urban areas. These suggested levels of accidents are derived from the County Donegal Road Safety Working Group - Road Safety Statement and Plan.

Each site should have a treatable accident problem, ie preference is given to site with common factors be they types of accidents or contributory factors. Each proposal must be discussed with the NRA’s safety team, and evidence of this discussion must be demonstrated.

Considerable emphasis is placed on collision data. Personal injury collisions for the previous 5 years are considered. Previous collisions and material damage collisions can be submitted as addition information in order to substantiate a recurring problem. Measures are expected to achieve a 30% - 40% reduction in collisions after completion.

Applications for funding are made to the DoELG in June for projects to be funded the following year. As DoELG policy, criteria and guidance develops in relation to low cost accident scheme selection, the Council will utilise the most up to date advice.



APPENDIX "B"

NRA CRITERIA PREFERED FOR LOW COST SAFETY SITES

The NRA will consider five to ten locations for funding per annum. These should be the sites that exhibit the greatest promise of accident reduction and ranked in benefit to cost ratio.

The NRA favour single site locations over road lengths.

Each location should have a minimum of three personal injury collisions in rural areas, and five personal injury accidents in urban areas. The current NRA intervention levels are 3 personal injury collisions in 3 years in rural areas.

The NRA favour schemes costing between €2,000 and €30,000

Each site should have a treatable accident problem, ie preference is given to site with common factors be they types of accidents or contributory factors.

Each proposal must be discussed with the NRA's safety team, and evidence of this discussion must be demonstrated.

Considerable emphasis is placed on collision data. Personal injury collisions for the previous 5 years are considered. Previous collisions and material damage collisions can be submitted as addition information in order to substantiate a recurring problem.

Measures are expected to achieve a 30% - 40% reduction in collisions after completion.

Applications for funding are made to the NRA in August / September for projects to be funded the following year. As NRA policy, criteria and guidance develops in relation to low cost accident scheme selection, the Council will utilise the most up to date advice.



APPENDIX “C” OWN RESOURCES FUNDING FOR LOW COST SAFETY SITES

To date there have been two sources for low cost safety funding from Donegal County Council’s own resources.

Development charges – Charges levied on developers for road improvements. Schemes can only be funded from this source where there is a sufficient eligible amount of development charges available.

Road traffic safety fund – In the past, these monies have been coupled with the schools safety initiative. These monies are not restricted to any region but are generally limited in the amount that is available.



APPENDIX "D"

FIRST YEAR RATE OF RETURN

The method by which the sites will be ranked is the first year rate of return (FYRR). This is a simple measure of cost benefit and a way of calculating whether a scheme can be justified in economic terms and is described in "A Guide to Road Safety Engineering in Ireland, Department of the Environment 1996".

Using this measure the schemes will be ranked, with the highest ranking schemes being proposed for national funding:

The formula for calculating FYRR is:

$$\%FYRR = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

To calculate the Annual Collision Saving, costs are associated to collisions based on governmental figures published in the NRA's annual "Road Collision Facts" publication.

These figures take into account numerous factors such as loss of output, human costs, medical expenses, damage to property, administration, professional and emergency service costs. The annual collision cost for the location is then calculated. Reductions in collisions for different types of remedial measures are derived from performance studies of past installations (Appendix E shows typical savings that can be expected from different types of installation). Using all the available information the annual collision saving can then be calculated.

A first year rate of return of 100% would equate to the scheme saving enough casualties to pay for itself within one year.



APPENDIX "E"

EXPECTED PERCENTAGE REDUCTION IN ACCIDENTS FOR DIFFERENT TYPES OF LOW COST REMEDIAL SCHEMES

This document summarises the findings from TMS's safety schemes database. This document includes 3 years before and after data for a range of schemes. The information was provided by Local Authorities throughout the UK for a period during the mid to late 1990's.

Cautionary note : this research featured only successful schemes and so the reduction in accidents is artificially high, as a general rule a 30% reduction in accidents would be a typical return for most low cost remedial schemes.

Analysis of schemes costing less than £100,000 by scheme category

<i>Group description</i>	<i>Average cost (£)</i>	<i>Reduction in accidents (%)</i>
Anti-skid		
34 schemes	8,620	57
Area traffic calming		
14 schemes	46,093	57
Chevron signs		
14 schemes	2,505	43
Controlled crossing		
73 schemes	15,916	31
Crossing improvement		
35 schemes	11,057	41
Guard rail		
28 schemes	6,230	30
Lighting		
14 schemes	9,709	21
<i>Group description</i>	<i>Average cost (£)</i>	<i>Reduction in accidents (%)</i>



Appendix "E" - Expected percentage reduction in accidents for different types of low cost remedial schemes

Markings		
43 schemes	2,020	34
Markings and signs		
63 schemes	2,537	41
Package		
97 schemes	22,099	42
Refuges		
65 schemes	10,387	37
Resurfacing		
27 schemes	13,810	46
Retexturing		
3 schemes	8,133	68
Road improvement		
38 schemes	15,882	62
Signal improvement		
16 schemes	17,095	22
Signs (other)		
30 schemes	1,691	50
Speed limit		
6 schemes	1,117	33
Traffic calming - horizontal		
16 schemes	22,606	46
Traffic calming - vertical		
58 schemes	23,333	65
Traffic management		
4 schemes	5,350	38
Warning signs		
36 schemes	553	46
Safety fence		
4 schemes	19,634	53
Group description	Average cost (£)	Reduction in accidents (%)



Appendix "E" - Expected percentage reduction in accidents for different types of low cost remedial schemes

Cycle facilities		
3 schemes	26,705	27
Footway		
6 schemes	10,295	37
Red light camera		
3 schemes	10,000	15
Speed camera		
28 schemes	18,236	13
Roundabout		
3 schemes	4,667	67
Right turn lane		
12 schemes	11,849	48
Visibility improvement		
12 schemes	7,890	27
Other		
13 schemes	16,828	37
Junction improvement		
34 schemes	18,513	44
New traffic signals		
15 schemes	40,717	67
Mini roundabout		
18 schemes	14,769	49
Crash barriers		
1 scheme	82,078	13
<hr/>		
AVERAGE	13,632	34

*Produced by: TMS Consultancy, Barclays Venture Centre, Sir William Lyons Rd, Coventry, CV4 7EZ, Tel: 01203 690900, Fax: 01203 690274, E-mail: info@tmsconsultancy.co.uk, Web site: www.tmsconsultancy.co.uk
 Information above was obtained from the TMS website which states that "these resources are free to download, print and share as you wish."*



APPENDIX “F”

HOW HAZARDOUS LOCATIONS WILL BE INVESTIGATED

- 1) Determine the exact location and perceived problem at the site.
- 2) Check the accident database. Look for common factors, i.e. similar types of accidents, similar times or dates, dusk / dawn, similar contributory factors, wet / dry etc. Look at the type and severity of the accidents, does it meet the minimum criteria for DOELG / NRA funding (see Appendix A and B).
- 3) Conduct a site visit, discuss and agree possible solutions to the demonstrable collision problem and any other local issues.
- 4) Prepare cost estimate of the agreed works.
- 5) All sites within the county are ranked and provisional lists for DoELG, NRA and Own resources funding are drawn up.
- 6) The NRA and DoELG provisional lists are discussed with the NRA safety team as required and the elected members are consulted. The lists are then finalised and submitted for funding consideration.
- 7) The provisional lists for own resources funding low cost safety are presented to Elected Members and the lists are then finalised.
- 8) Sites, which are unsuccessful in securing funding, will be retained for consideration for future low cost safety funding.
- 9) Remedial measures are implemented. Each site (which has received funding) will then be subject to a Stage 3 Safety Audit (a recorded inspection to check the safety of the works/site), to ensure that problems have been treated and that no new hazards have been created. A record of all audits shall be maintained in the Road Design Department.



APPENDIX "G"

SAMPLE LOW COST REMEDIAL WORKS RECORD SHEET

Location Road no.

Collision data
.....
.....

Site meeting with
..... Date

Problem
.....
.....
.....

Sketch

Agreed solution
.....
.....
.....

Estimate €..... Funding body Award €.....

Design required Y / N Brief received Design issued

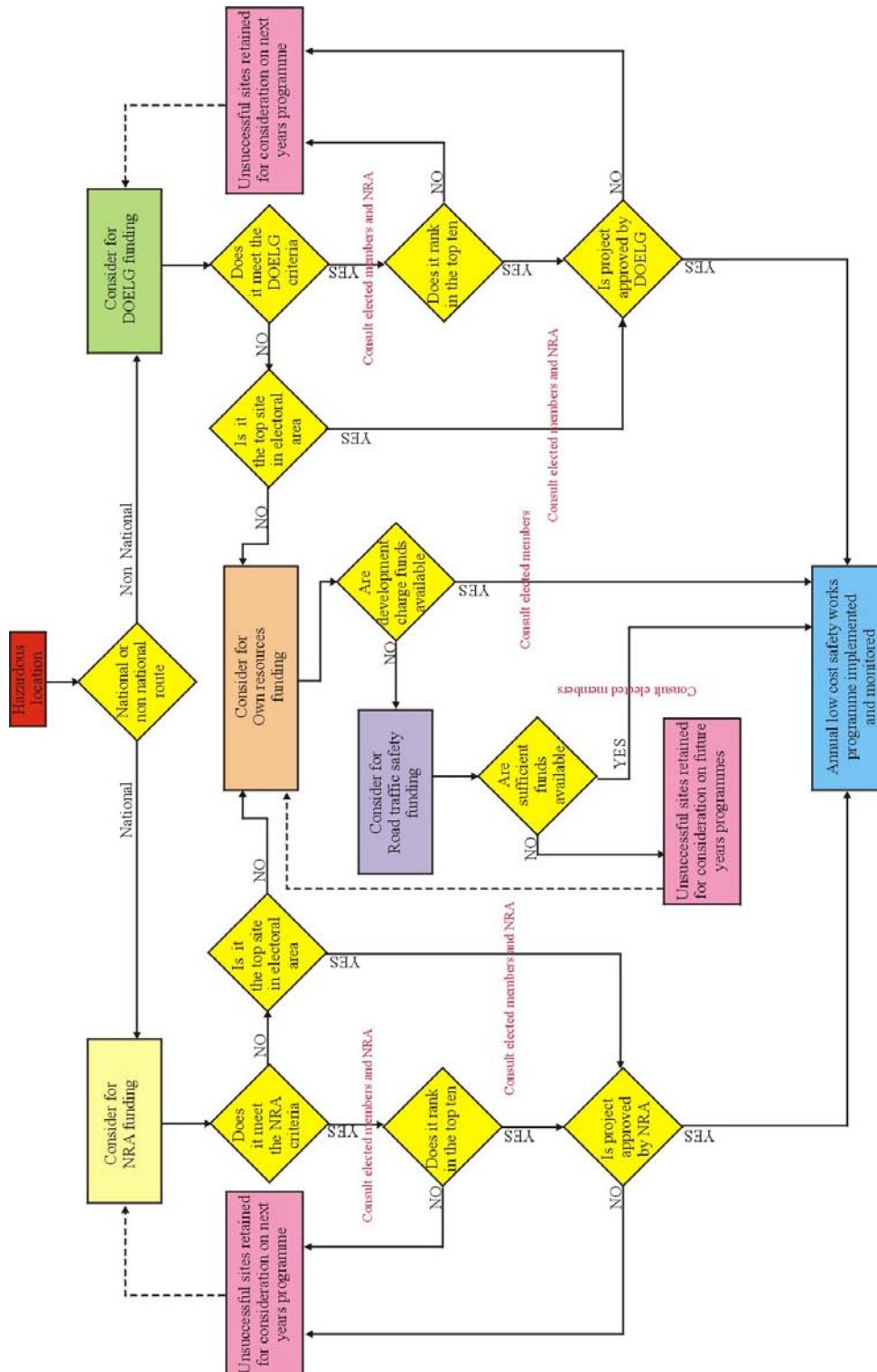
Works completed Works inspected

Signed off by Road Safety Engineer Date



Appendix “H” - Selection process flow chart

APPENDIX “H” SELECTION PROCESS FLOW CHART



Flow chart displaying how a hazardous location shall be considered for low cost remedial works



APPENDIX "I" LOW COST SAFETY DATABASE FLOW CHART

