Review of road safety management practice
Final report

TRL Limited with Ross Silcock, Babtie Group Ltd.

By A Aeron-Thomas, AJ Downing, GD Jacobs, JP Fletcher, T Selby and DT Silcock

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DFID GRSP TRL Ross Silcock, Babtie Group Ltd

EXECUTIVE SUMMARY

On behalf of the Global Road Safety Partnership, DFID has funded this review of road safety management. Four key areas were investigated: road safety organisation, road safety plans and strategies, funding sources and the participation of the business sector in promoting road safety. The review was to include both high income and low income countries and identify good practice for low income countries.

Instead of a broad brush international review, the study was asked to focus on documenting the situation of these four key areas in a smaller number of countries. Thirteen case studies were summarised; five from high income countries (Victoria (Australia), New Zealand, Sweden, UK), one Latin American country (Chile), three Asian (Bangalore (India), Bangladesh, Indonesia), one in the Pacific (Fiji), and four African countries (Ethiopia, Ghana, South Africa and Zambia).

A short questionnaire covering all four areas was sent to key organisations and individuals in the countries selected. Under organisation, the topics of lead agency, co-ordination, technical and financial resources allocated to managing road safety programmes were reviewed while the plan section covered the development and implementation process as well as the plan content in terms of structure, deadlines, costs responsibilities and targets. Funding sources and amount of funding were also queried in an attempt to identify who is paying for what in road safety at the present time. The extent to which the business sector was promoting road safety was also requested. The review also included much more data gathering on fleet safety in the UK.

Examples of good practice and lessons learned in each area were presented as were recommendations, the latter of which are summarised below:

Road Safety Organisation

- Lead responsibility for road safety needs to be defined (and should include co-ordinating role) and accepted by key organisation.
- A good bi-lateral working relationship between traffic police and roads authorities should be the second priority.
- Multi-sectoral co-ordination should be based on successful local precedents. If none exist, road safety co-ordinating body should be limited to key ministries.
- Working groups and technical committees should be used both to promote the participation of business and civil society in developing road safety policy.
- Council and committee members will have a large role in the success of a programme. Members need to be committed and pro-active.
- A road safety central office will be required, regardless of the organisational model chosen, with adequate financial and technical resources to be effective.

Road Safety Plans

- First step in plan development should be to determine an agreed budget range/limit and likely sectoral/organisational allocations.
- A key plan priority action should be the development of sustainable funding sources.
- Road safety plans should include the work programmes of key implementing organisations and not be sector based with responsibility diffused.
- Local staff should take lead role in plan development with plan structure based on what has worked effectively in country.

- Technical assistance should be focused on helping with local development, not producing the plan as a project output.
- Sector working groups should be developed to ensure the perspectives of vested interested groups are considered.
- First national road safety plans should target a limited number of key organisations and priority actions, and include short-term low/no cost actions.
- Post crash interventions such as trauma management should be included in road safety plans.
- Greater priority needs to be given to monitoring with performance indicators used to measure input and output as well as outcome, i.e. casualty reduction targets.
- Local plans should be encouraged to be developed independently and even ahead of national plans.
- Annual work programmes and reviews will be needed, as will quarterly monitoring.
- Donor assistance should include seed money for plans to promote follow-up action and technical assistance (foreign and local) is needed after a plan is developed.

Funding

- Funding merits the same consideration as other technical aspects, i.e. road safety engineering, traffic law enforcement.
- Governments should assume responsibility for road safety funding and ensure ministry budgets include road safety financing.
- Road maintenance budgets and Road Funds should include a hazardous location treatment programme budget.
- Road user charges should be used to provide a regular and dedicated funding source.
- A proportion of traffic fines should be allocated to traffic law enforcement for road casualty reduction activities only.
- Road Safety Funds should be established for those activities not the direct responsibility of a ministry.

Business Sector Participation

- Identify and recognise the participation of business sector in promoting road safety and involve them in developing road safety strategy.
- Recognise and build on the management skills of the business sector.
- Encourage the adoption of best practice in risk management, including driver training.
- Use Health and Safety legislation to ensure fleet operators are responsible for road safety (re employees and other road users).
- Match potential sponsors to road safety activities.
- Promote the commitment to road safety through the use of awards.
- GRSP partners, business partners and donor agencies, should submit road safety portfolios and annual reviews of road safety work.

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1 Introduction

1.1 Background

Recent research by TRL, WHO and others indicate that road deaths in low income countries (LICs) are a burden on the most economically active section of society, with wide repercussions for their dependants and family. Whatever modest improvements are introduced in these countries on an ad hoc basis, clearly little can be done to improve the overall situation without a clearly defined and efficient management framework. Some countries, particularly but not exclusively high income countries (HICs), have set up systems to manage the operation, management and financing of road safety which appear to work well. Interestingly however these do not always follow the same pattern. How these systems have been introduced and how they operate provides valuable insight for LICs.

In order to provide guidance to LICs, the Department for International Development (DFID) has commissioned this review of Road Safety Management on behalf of the Global Road Safety Partnership (GRSP), with a focus on the key areas of organisation, plans, funding, and business sector participation.

While DFID has actively promoted road safety in LICs for over a quarter of a century, GRSP is a recent initiative under the World Bank's Business Partners for Development (BPD). GRSP is a partnership between business, civil society and governmental organisations dedicated to reducing the human and financial losses from road crashes in LICs. Both DFID and the GRSP promote the documentation and sharing of information on effective road safety practices in an attempt to minimise the costs of motorisation in low income countries.

This review has being conducted over a six month time period (July-December 2000) and was undertaken by the Transport Research Laboratory (TRL) in association with Ross Silcock, Babtie Group Ltd. Some of the LIC case studies were updated prior to the report being published on the web (February 2002).

1.2 Study objectives

This review is intended to investigate the current road safety situation in a sample of LICs and HICs, and to identify good practice in the following four areas:

- Organization of road safety
- Road safety plans
- Funding of road safety
- Private sector participation

1.2.1 Study limitations

This study requested the collection of data, some of which, i.e. funding, is readily available in very few countries while others, like business sector participation, was not easily collated. Evaluating the effectiveness was another area which did not lend itself to easy identification. Case study selection was influenced by the countries which the team would be visiting on other projects and so would be able to collect information in person.

1.3 Report structure

After this introductory chapter, the methodology and case study selection are explained in Chapter 2. The key areas of the review: coordination, action plan, funding and business sector participation are discussed separately in Chapters 4-7. A summary table is included in each of these chapters with the key features of the case studies highlighted. These chapters also include examples of good practice and a review of the lessons learned while the recommendations are presented separately in Chapter 8.

The appendices include the survey sent to the countries and a summary of the findings for each country. Appendix C shows the membership composition of several National Road Safety Councils with business sector and community representatives highlighted. Appendix D contains the recommendations from a review of over 100 local UK road safety plans with the different plan structure used in several countries shown in Appendix E. Examples of business sector participation in road safety are included in Appendix F with examples from the case studies, UK mailing and a literature review.

1.3.1 Information sources

Some of these reviews benefited from in-country discussion (during visits on other projects) while others relied on published references and telephone interviews. A key source of information on road safety plans was provided by the New Zealand Land Transport Authority (See Appendix E).

2 Methodology

2.1 Case Studies

The study was requested to focus on fewer countries but provide a more detailed review of the road safety management situation. The case studies were selected on the basis of:

- Mixture of HICs and LICs
- Regional representation
- Variation in motorisation levels
- Different approaches to road safety management
- Upcoming country visit

The latter variable was an acknowledgement that the issues being covered were unlikely to be easily available in many LICs. Countries where visits were expected on other projects by the team were included as they allowed the opportunity of personal interviews.

A total of 13 case studies were summarised (See Table 2.1), 4 from high income countries (HICs) and 9 from low income countries (LICs). This review has focused primarily at the national level although Bangalore was included as an example of a metropolitan situation and the State of Victoria selected on the basis of its successful reputation. All regions were included in the sample except for Central and Eastern Europe.

A detailed questionnaire covering the four key areas (included in the Inception Report) was piloted but found to be too difficult to use. An abbreviated version was developed and used with the majority of countries. Case study summaries were based on the responses to the questionnaires and published data, including project reports.

Table 2.1 Case study summary statistics (1996/97)

	Pop. ('000)	GNP US$ per capita	Reported Road Crash Deaths	Reported Road Crash Injuries	Motor Vehicles ('000)	Fatality Risk[1]	Fatality Rate[2]	Motorisation Level[3]
Victoria (AUS)	4,661		419			9.4	1.2	
New Zealand	3,635	16,379	514	16,600	2,380	14.1	2.2	655
Sweden	8,845	26,225	537	20,810	4,218	6.1	1.3	477
UK	58,782	20,946	3,598	316,704	24,001	6.1	1.5	408
Bangalore (IND)			678	8677	849			
Bangladesh	121,671	362	2,041	3,301	458	2	45	4
Chile	14,419	4,890	1,925	52,422	1,622	13	12	113
Ethiopia	58,234	112	1,693	7,455	87	3	195	2
Fiji	803	2,500	88	1,165	90	11	10	112
Ghana	17,522	398	987	8,372	135	6	73	8
Indonesia	197,055	1,124	10,990	21,814	14,454	6	8	73
South Africa	37,643	9,981	9,981	128,440	5,929	27	17	158
Zambia	9,215	384	928	5,564	237	10	39	26

Source: TRL 445 Estimating Global Road Fatalities (2000)
[1]Fatality risk: road deaths per 100,000 population, [2]Fatality rate: road deaths per 10,000 motor vehicles
[3]Motorisation level: motor vehicles per 1,000 population

2.1.1 Additional countries

In addition to the 13 countries where all four key areas were reviewed, information, especially good practice examples, were sought from another countries. For example, the Netherlands give great priority to road safety and have introduced a strategy which focuses on the municipal level and the US government has actively encouraged the participation of employers in improving traffic safety.

2.1.2 Effectiveness

A main objective of this review was to identify what had been implemented and had been effective. Effectiveness can be defined in a variety of ways including meeting casualty reduction targets and completing actions within deadlines and budgets. It was decided that the practical approach for a study this size would be to have effectiveness decided by the local contacts, wherever possible.

2.2 Business Sector Participation

In addition to being included in the country questionnaire, the study also attempted a more in-depth review of business sector participation in road safety, with a focus on the UK. It was not possible within the study limits to provide a complete or comprehensive record of past or even present business sector practice. The objective was to provide an indication of the type and extent of business community involvement already occurring and publicise examples of good practice. The costs and benefits to a company of becoming involved in road safety will be sought as well as the motivation and reasoning behind it.

The Inception Report Literature Review identified four main areas of business involvement that the study would concentrate upon. These are in-house driver training and risk management systems, corporate sponsorship, research and design and professional associations. However, in order to identify examples of business promotion of road safety, it was necessary to focus and survey those private sector companies that carry out either internal road safety training or sponsor external road safety campaigns. Examples of research and design were obtained from sources such as road safety award winners and were carried out as part of the overall study rather than as an aspect of the business involvement survey. Professional associations also help to promote road safety and their role within the business community was queried. Suitable organisations were contacted

with the aim of establishing their commitment to road safety through direct initiatives and using their membership base to seek examples of business involvement and to distribute questionnaires.

The actual business survey was split into two, concentrating upon companies involved in in-house and/or external road safety promotion.

3 Road Safety Organisation

3.1 Introduction

Box 3.1 Key Road Safety Public Sectors:
- Transport (roads & motor vehicles)
- Police
- Justice
- Local Government
- Health
- Education

Two key factors inhibit the effectiveness of road safety management. First, many different organizations, public and private, national, regional and local, are involved in improving the interaction and reducing the crash risk between motor vehicles and road users on public highways and coordination is often a major issue. While key public sector ministries are shown in Box 3.1, private sector firms with vested interest in road safety include fleet operators, petrol companies, motor manufacturers insurance companies, and alcohol manufacturers and distributors. Community organizations will also be concerned about road safety, especially organizations representing vulnerable road users, i.e. pedestrians, cyclists, and motorcyclists, and road victims as well as neighbourhood concerns.

The second factor, and perhaps even more importantly, is that road safety is not the first priority of any of the statutory agencies involved. Key priorities include road maintenance and network development for the roads authorities, registration of motor vehicles and drivers for the road transport departments, crime prevention and prosecution for the police and Justice ministry. The health sector can be expected to be dominated by more prevalent diseases and the education sector with teaching basic numeracy and literacy.

The organization of road safety must face this challenge of having many participants, a few reluctant players and no champion.

3.1.1 Background

The role of institutions was reviewed in “Reducing Traffic Injury—A Global Challenge” (Trinca et al, 1988), winner of the 1988 Volvo Traffic Safety Award. The experience of several countries was summarized (USA, Australia, and Japan) and despite different approaches, all highly motorized countries were believed to have experienced a sustained improvement in their per kilometer death rate in the previous decade. The review found that as there was “considerable diversity in institutional arrangements among the motorized nations with “success stories”, the fine details of organizational structure are unlikely to be of critical significance…there is unlikely to be a single optimal institutional arrangement” (Trinca et al, 1988).

Despite this finding, suggestions for organizational arrangements included the general recommendation that a separate traffic safety agency with sufficient executive power and funding be established at the national level. If an independent agency could not be established, then, regardless of which lead ministry, it should be supported by a multi-disciplinary board with clear definitions of inter-sectoral responsibility and institutional accountability fostered by the use of targets.

A review of road safety in Asia and the Pacific (Ross Silcock/ADB, 1998) included road safety organisation and recommended the following:

- A Senior Government official assigned overall responsibility
- Establishment of a multi-sectoral co-ordinating body, i.e. NRSC
- Appointment of a Director (and staff) to a support office
- Adequate financial and technical resources for planning and implementation of a safety programme
- Evaluation of outcomes (Ross Silcock/ADB, 1998)

With the successful establishment of a NRSC and local funding source in Fiji, based on these guidelines, this was adopted as a standard approach to improving the delivery of road safety in LICs. However it should be noted that it was only advocated as a model for small countries in ADB and UK guidelines and It is far from certain that this model will be the most effective in all LICs. A contributory factor to the local commitment shown in Fiji can be assumed to have been the guaranteed funding allocation from the World Bank, implementation funds are rarely known at the start of the planning process.

3.1.2 Chapter structure

This review of road safety organization is structured into the following key topics:

- Lead organization
- Co-ordinating mechanism
- Technical and financial support
- Effectiveness

Table 3.1 presents several key indicators of the road safety organisation structure found in the 13 case studies while information from other countries is also included in this chapter.

Box 3.2 Early US traffic safety legislation

1966	The **US Highway Safety Act** required the development of a coordinated, national highway safety program through federal grants to the States. Each State was legally required to have a uniform highway safety program approved by the Secretary of Transportation. Uniform standards included crash reporting and investigation systems, vehicle registration, highway design and maintenance, traffic control, vehicle codes, traffic surveillance systems and emergency services.
1968	The **Federal Highway Act** authorised $400 million for a two year TOPICS program (Traffic Operations Program to Increase Capacity and Safety). This allowed federal aid highway funds to be used for traffic engineering improvements, including hazardous locations, on urban streets.
1970	The **Highway Safety Act** established the National Highway Traffic Safety Administration and required all states to have agencies to administer their highway safety programs by 1971. Highway safety programs and research were to be financed two-thirds from the Highway Trust Fund.

Source: Pignataro (1973), Trinca et al (1988)

3.2 Lead Agency

In most countries, road safety is considered the default, if not legally stated, responsibility of the highway or transport authorities, on whose road networks the vast number of road crashes occur. In the four HIC countries reviewed, road safety was the responsibility of the communications ministry as it was in six of the LIC countries summarized.

In some Asian countries, the police are perceived as the lead road safety agency. This is currently the situation in the city of Bangalore, India as well as Vietnam, China and also Ethiopia. It was the National Police Agency who declared a “State of Emergency” in Japan when road deaths reached an unprecedented level in 1969 (Trinca et al, 1988). With control of the official road safety data in addition to traffic control and crash investigation responsibilities, the police in all countries play a key, if not necessarily the lead, role in road safety.

Because the organizations involved all have other first priorities, responsibility for road safety has been legally specified in several countries. 1974 UK legislation imposed the duty to improve the road safety situation on local authorities, where the vast majority of road crashes occur.

As shown in Box 3.2, road safety legislation was introduced in US in the 1960s, during which time there was an explosive increase in road deaths (38,000 in 1961 to almost 56,000 in 1969). Prior to the Highway Safety Act of 1970, the main source for traffic safety research had been the US Public Health Service.

Recent legislation in Vietnam (1995) increased the role of the road authorities in road safety whereas the Ethiopian Roads Authority Proclamation (1997) did not include any mention of road safety responsibilities.

In addition to a legal mandate and designation of legal obligation to improve road safety, political support is also very important. Major changes, especially those involving multiple ministries are only possible, if strong political support can be generated. In the UK, the recent road safety strategy was launched by the Prime Minister and entitled the "Government's road safety strategy" whereas previous road safety policy documents had been presented by the Transport Minister.

Box 3.3: Good Example of Political Support
The Swedish Parliament unanimously approved Vision Zero and its principle that no death or grievous injury was acceptable on the roads. This came at a time when Sweden was already well known for having the best road safety record in the world. Instead of comparing it's record with other countries (which could have led to complacency), Sweden looked at other high risk sectors including nuclear energy and electricity. The result was a concept which stated deaths and grievous/disabling injuries could not be economically justified, no matter what the price.

3.3 Co-ordinating Body

Three basic organisational structures were presented in the Inception Report. Of the countries reviewed, most were identified as having either the lead agency or committee approach and are shown below (See Table 3.2).

Table 3.2 Different road safety organisation structures

	Lead agency	Multi-sectoral committee	Independent /NGO
Advantages	Faster acting Clear funding stream	Broad based input Local ownership	Campaigning and lobbying capability. Able to receive various funds
Disadvantages	Limited focus Acceptance of non govt funds may be a problem	Mostly advisory role only Funding streams unclear	Little authority over public sector
Examples	Sweden, UK, Chile, South Africa, Victoria, Ethiopia	Zambia, Bangladesh, Ghana, Fiji	Austria, Singapore

Table 3.1 cont. Road Safety Organisation Key Features

	Victoria, Australia	New Zealand	Sweden	UK	Chile	South Africa
Lead agency	VicRoads	Land Transport Safety Authority	Swedish National Roads Administration	Dept. of Environment, Transport & Regions	National Comm. of Road Safety /MOTC	National Department of Transport/ MOT
Legal authority	Yes	Yes	Yes	Yes	Yes	Yes
Co-ordinating Body	RS Executive Group	NRSC	Multi agency working group	Interagency Working Group	CONASET	RTMCC
a) total members	a) 3	a) 7	a) 3	a)	a) 9	a) 20-30 (provincial rep)
b) Private sector	b) none	b) one	b) no	b)	b) none	b) none
c) Community/ VRU/ victim	c) none	c) none	c) no but an NGO (NTF) is an associate member	c)	c) none	c) none
d) Chairman	d) VicRoads	d) LTSA	d) SNRA	d) DETR	d) MOTC	d) MOT
Role	Executive	Executive	Advisory	Advisory	Executive	Executive
Meeting frequency	quarterly	Quarterly + one annual planning workshop	To be completed		Every 3-4 months	Bi-monthly
Plan development responsibility	Develop plan	Approved plan	Consultation only	Established after strategy published	Developed work programme	Approve strategy and programmes
Technical committees	RS Mgt Group RS Reference Group Traffic Safety Educ Group	NRSC WorkingGroup NRSCAdvisory Group Industry Con. Group NRSC Mgt Review	Several steering/inquiry committees and working groups	Road Safety Advisory Panel, Child Pedestrian Safety, Statistics, and Occup. Road Safety Working Group (4)	No	Nine standing technical committees and special project task forces also
Central Office						
a) staff	a) yes	a) 483 in LTSA	a) Traffic Safety Dept.	a) RS and Env Directorate	a) 22 staff	a) 63 in Rd Traffic Mgt/NDOT
b) training	b) yes	b) yes	b) yes	b) yes	b) yes	b) yes
Budget	$40 million Vic Roads	$190 m NZRSP	Yes	DETR (not Panel)	Dedicated budget	Yes
Funding Sources	General revenue, insurance sponsorship	NZRSP, Crown, Contract, Third Party Insurance	General revenue	General revenue	General revenue	4 proposed sources: fees, fines & penalties, interest &parliament
Effectiveness	Strong leadership Coordinated lead agencies approach Proactive	Strong leadership Also good coordination	Strong leadership Good political support (Vision Zero)	Strong lead agency Traffic policing not given priority No medical sector inv.	Good leadership Crash rate reduced US$1 M budget in 1999 (down 35% from 1998)	New mgt. structure being established 1996 RTMS inadequately financed

Table 3.1 cont. Road Safety Organisation Key Features (continued)

	Bangalore	Bangladesh	Ethiopia	Fiji	Ghana	Indonesia	Zambia
Lead agency	Traffic Police	BRTA/ Ministry of Communications	Federal Police	Ministry of Works/NRSC	Ministry of Road & Transport/NRSC	Director General of Land Comm. (MOC)	NRSC/ Ministry of Communications
Legal authority	No	1996 legislation	No	Yes	1999 Act	N/a	1995 Proclamation
Co-ord. Body	Bangalore Road Safety Committee	NRSC	RSB proposed	NRSC	NRSC (commission)	None	NRSC
a) Members	a) 10-15	a) 20	a) 4 recommended	a) 23	a) 19	A) n/a	a)
b) Private sector	b) recommended	b) yes	b) to be on TWGs	b)	b) 10	b) n/a	b)
c) VRU/victim	c) no	c) no	c) to be on TWGs	c) none	c) No	c) n/a	c) yes
d) Chairman	d) Police Comm.	d) Minister of Com	d) to be elected	d)	d) MRT Minister	d) n/a	d) appointed
Role	Advisory	Advisory	Advisory/Executive	Advisory/Executive	Advisory/Executive	N/a	Advisory/Executive
Meeting frequency	Rarely	Rarely	Quarterly proposed	quarterly	Every 2 months	N/a	
Plan development responsibility	Not yet	Approved	Approval and funding requests approval	Second Plan drafted	Drafted National Programme	Produced with donor assistance	Produced with donor assistance
Technical committees	None	No	Technical working groups (TWG) and regional road safety committees recommended	Executive, Finance, Education, Research & Dev, Traffic & Roads Committees (5)	yes	N/a	No
Central Office							
a) staff	a) no	a) 1-2 seconded	a) Included in plan	a) 8-12	a) 20 (19 seconded)	a) no	a) yes
b) training	b) no	b) no	b) "	b) yes	b) very little	b) n/a	b) no
Budget	No	No	Not yet	Yes	C500	None	a) very small
Sources	Sponsorship, state revenue	General revenue, 2% RHD maint. budget proposed	Road Fund, general revenue	General, Third Party Safety Levy, Fees, Sponsorship	Consolidated fund, Ins comm. (C10m), sponsorship	None	General revenue, minimal from Road Fund
Effectiveness	Not yet begun Private sector leadership	Road safety eng. capacity being developed but NRSC has no resources	No leadership yet Road Fund Board agreed up to 3% for road safety measures	Strong mgt, Dedicated funding source & office staff. Clearly defined roles. Interagency co-ordination improving, more funding needed	New NRSC structure being tried Previous NRSC was not resourced and ineffective	No leadership No national policy but engineering capacity being improved in road projects	Weak leadership No financial investment in road safety, NRSC staff unpaid and demoralised

Adoption of a lead agency can be assumed to be the "default" approach as one organisation will at least occasionally have to report on the road safety situation. The most successful countries with the lead agency approach have been those where the highway/transport authority (Sweden, UK) assumed responsibility for road safety instead of the police (Ethiopia), although there are examples of successful programmes in countries where police were the lead agency (eg Japan). However, generally it has been found better for the lead agency to be the roads agency. A key factor which might be of interest to LICs is that in many LICs there are major aid funded road rehabilitation programmes underway so opportunities may exist now to improve road safety. No such major investment or opportunities appears to be ongoing in the police.

While the UK is an example of a lead agency, it should be noted that until the government's strategy was released in 2000, road safety delivery had been "bottom up" with a reliance on local road safety plans and programmes for engineering, education and police activities. Co-ordination was seen to be more important at the local level. Box 3.4 includes examples of the benefits and the disadvantages of the UK system.

Box 3.4. Pros and Cons of a Lead agency (UK):

The UK has benefited from having a strong commitment to road safety from the highway authorities. Hazardous location improvement programmes have been required for decades, road safety audit was developed in the UK, and until recently road safety benefited from ring-fenced budgets. DETR's Road Safety and Environmental Directorate has some 100 staff working in the following six departments.

RS1 Co-ordination of road safety policy; drinking and driving; seat belts and driver fatigue, new driver safety, older road users, penalty point system, policing and enforcement

RS2 Speed and speed limits, enforcement cameras, management of research into speed policy, rural and urban safety management

RS3 Vulnerable road users; local casualty reduction targets; and liaison with local authorities

RS4 Novice driver training and testing; management of research into publicity and attitudes; and cycling and motorcycling

RS5 Child safety and Road Safety Advisory Panel

RS6 Driver testing, training and behaviour

However the UK has also suffered from not having a more co-ordinated approach to road safety. For instance, traffic policing is not considered a core function of the police and there are no performance indicators which relate to traffic policing. Despite a wealth of information and resources, mostly funded by DETR, traffic safety education is not mandatory in the national school curriculum. Although half of all government road safety spending is on the medical care of casualties, the recent government road safety strategy is the only national plan known to have excluded trauma management and medical treatment of road casualties.

New Zealand has not been categorised as it is seen as a combination approach. The Land Transport Safety Authority (LTSA) functions as the lead agency but it is also supported by the active participation of many different committees, including an NRSC (see 3.3.3).

3.3.1 NRSC Membership

Even in the countries with a lead agency, multi-sectoral coordinating committees were used because the lead agency still needed to coordinate programmes and activities with other implementing organisations. The establishment of NRSCs in LICs has been a priority with donor assistance the past few years as they were believed to result in an organisation

whose first priority would be road safety. NRSCs established in LICs tended to have many representatives whereas those in HICs were limited to the key public sector agencies only.

The large sized NRSCs in LICs also tended to have mainly public sector representatives (See Appendix C), with Zambia one notable example where the representatives of the roads sector were not even allowed to vote. Several were established without including the Ministry of Health as a member (Bangladesh, Zambia and Vietnam). This situation has now been corrected in Vietnam and recommendations to add the Ministries of Education and Health to the Bangladesh NRSC were made two years ago. Regional representation can be an issue as seen in Bangladesh where several NRSC members represented schools or universities and came from more remote regions where road crashes are not a major concern. This can be assumed to have contributed to the infrequent meetings with all other NRSCs reporting to meet on a quarterly basis.

In most LIC NRSCs, the members and the chairman are usually appointed directly rather than elected and there appears to be little involvement of those most directly affected by road crashes, i.e. business and vulnerable road users. The new National Road Safety Commission in Ghana has most of its members elected by the organisations they represent.

The business sector was included on all NRSCs or associated committees, except for Chile. However the other group most familiar with the devastating consequences of road crashes, i.e. vulnerable road users and road victims, were rarely represented for despite their experience and likely commitment to the issue, they had little if any authority or public support.

3.3.2 NRSC role

As seen in Table 3.1, a major difference between LIC and HIC NRSCs is in their role, which should be clarified in the NRSC's terms of references with the responsibility for road safety planning and policy specified. Most LIC NRSCs were established as advisory bodies; only those with funding appeared to have any executive powers, i.e. funding equals authority. In HICs the NRSCs were linked to an agency with executive powers as well as advisory.

In East and Southern Africa, e.g. Zimbabwe and Malawi, councils have traditionally focused on delivery of education and publicity programmes. Although they may advise on policy they have not usually prepared national strategic plans.

3.3.3 Technical committees

Whilst the legislation relating to the setting up and function of an NRSC usually includes mention of technical committees, too often, NRSCs in LICs are expected to develop (as well as approve) road safety policy and programmes. One lesson reported from New Zealand was in restricting the NRSC to focus on high-level strategic issues and not operational concerns. NZ's NRSC is assisted by several committees, including the

- National Road Safety Working Group (NRSWG) has the same membership as the NRSC and is responsible for the detailed policy coordination between the member organisations and the development of recommendations for the NRSC.
- National Road Safety Advisory Group (NRSAG) monitors the implementation of the National Road Safety Plan and serves as a road safety forum offering independent advice to the NRSC. With 17 representatives (mainly from the public sector), the NRSAG also allows other related organisations, i.e. cycling, to make a representation to the NRSAG on an annual basis.

- Industry Consultative Group (ICG) represents the business sector with senior executives from 12 various transport industry organisations, i.e. Bus and Coach association, Automobile Association, Federated Farmers, Motor Industry Association, Motor Vehicle Dealers Institute.
- NZ Road Safety Programme Management Review Group (NZRSP) is a small group with members from the LTSA, NZ Police and the Ministry of Transport, working to improve the efficiency and effectiveness of the NZ Road Safety Programme.

Private sector agencies are represented on the NRSAG and on the ICG, the latter consisting of senior executives of the transport industry. The NRSAG has a key role as it monitors the implementation of the national plan as well as provide a road safety forum supplying independent advice.

In Hong Kong, the Road Safety Council is supported by three committees (publicity, research, and education), all of whom have specific terms of references with the publicity committee responsible for monitoring the annual road safety publicity campaign. There is also a nine member Working Group with representation from the public sector, business sector and NGOs, established to produce the Road Safety Council's Annual Report (Road Safety Council of Hong Kong, 1997).

Fiji and South Africa are two of the few LICs reporting the use of committees. Fiji relies on an Executive Committee, which meets bi-monthly and also has several technical committees covering: Finance, Education, Research and Development, Traffic and Roads Committees, which all meet monthly.

Technical committees were used to draft the first national road safety plan in Bangladesh but they were short-lived and disbanded before the plan was even approved, let alone implemented. Task forces are being established to develop the individual project proposals in Bangalore.

Box 3.5 Good Practice: Corporate Road Safety Working Parties

In the HIC countries surveyed, the business sector was represented on all public-private committees but in addition the establishment of corporate road safety working party have also occurred. Three examples are shown below:

UK: Established in 2000, the Occupational Road Safety Working Party, chaired by the Health and Safety Executive.

Australia: The Corporate and Fleet Safety Working Party was formed to develop a program likely to be accepted in the business environment. It commissioned the research report "Review of best practice road safety initiatives in the corporate and /or business environment".

New Zealand: The Industry Consultative Group includes senior representatives of the various sectors of the transport industry. It operates in an advisory capacity and reports to the National Road Safety Council Working Group

3.4 Technical and Financial Support

3.4.1 Road safety support offices

Road safety support offices are well established in HICs, as could be expected. Within the UK's Department of Transport, Environment and the Regions (DETR), the Road Safety and Environmental Directorate (RSED) has 100 staff working in four divisions. The Road Safety Division has six branches whose responsibilities are as shown in Box 3.4. A different division manages vehicle safety standards policy and legislation.

Box 3.6 New Zealand's Land Transport Safety Authority (LTSA)

New Zealand's LTSA is the central agency for road safety in New Zealand. It is overseen by a board of 5 who are appointed by the Minister of Transport to represent the public interest. There are 4 major groups working under the Director of Land Transport Safety (strategy, policy, corporate services and operations) in headquarters and seven regional offices.

The LTSA is responsible for chairing the NRSC and is also on the three other management committees (NRSWG, NRSAG, NZRSP). While the LTSA provides the technical input required for developing the National Road Safety Plan, the LTSA also has its own Strategic Plan and produces an annual work programme.

LTSA's focus has shifted in recent years, preliminary efforts being focused on looking for the best ways of allocating internal agency resources and coordinating agency initiatives. It was then realised that at least 90 per cent of the direct safety funding was in the hands of key partners in the road controlling authorities and Police. Accordingly, priority was shifted to focusing efforts on ensuring the efficiency of partner's activities and assisting them to be more successful. This was reported as requiring a difficult organisational cultural shift from a previous focus on individual agency contributions.

Within New Zealand's LTSA, responsibilities are organised into four main groups of: strategy, policy, corporate services and operations. Those LIC countries with well established offices, i.e. Chile, Fiji and South Africa, all were more active and effective at delivering road safety.

In Bangladesh, the Road Transport Authority (an organisation already well known to be understaffed) was expected to serve as the NRSC secretariat without any additional resources, while in Zambia, the NRSC received insufficient funding to even pay for salaries. Without adequate resources, programmes cannot be delivered and staff will not be motivated to even plan them if implementation is unlikely.

3.4.2 Funding

Whilst covered in detail in Chapter 5, road safety funding varied between countries, although general revenue is the most common funding source. NZ and Australia have dedicated road user fees and safety levies on insurance premiums whereas the UK and Sweden rely on general revenue. The UK is currently pilot testing traffic fines being retained for safety activities and hospitals are allowed to claim back treatment costs from insurance companies. During the 1990s, there was a dedicated road safety engineering budget for local authorities in the UK but this has recently been stopped. Local authorities in the UK In Sweden, road safety, especially under the Vision Zero concept, is seen as a fundamental responsibility of the government.

In addition to general revenue, efforts have been made in LICs to obtain from insurance levies and road maintenance/fund budgets as the latter have often included safety or traffic control measures in their founding legislation.

Whichever structure is adopted, i.e. lead agency or multi-sectoral coordinating body, resources, both technical and financial, are required if words are to translate into action. The countries where the delivery of road safety policy was lacking were those where there was no investment in the development or implementation of policy, rather than those which had adopted a less effective management approach.

3.5 Effectiveness

Different road safety organizational structures were found to be effective. Increased funding, political and public support for road safety have been achieved in countries both with NRSCs (Fiji, NZ, Chile) and without them (UK, Sweden). What appears to be more important is not so much the type of organisation or co-ordination but the provision of dedicated staff with sufficient funding. While all HICs surveyed had trained staff and programmes underway, this was not always the case with the LIC case studies. Whereas Fiji and Chile have established offices, others like Bangladesh and Zambia have given insufficient priority to the tasks of managing a road safety programme. Problems included adding key tasks to existing full time jobs and low salary (even non-payment) discouraging the identification and retention of qualified staff.

3.6 Lessons learned

3.6.1 Process of change

The organisation of road safety has undergone much change in the past decade. Of the 13 case studies, all but the UK had revised the responsibility of road safety in the last decade. Sweden closed its National Traffic Safety Office and transferred safety responsibilities to the national roads administration whilst Zambia and Ghana established and revised their coordinating organisations. The UK has seen the least amount of change with its transport department still leading road safety, but a broader based approach is now being introduced with the recent establishment of a public-private advisory panel.

3.6.2 Different approaches successful

Different organisation models have proved effective in countries with similar levels of motorisation. While NRSCs have been promoted in many countries in recent years, both the UK and Sweden, countries with the best road safety record in the world, rely on a lead agency approach with multi-sectoral coordinating bodies operating at a lower level. Coordination is undertaken but there is also a single organisation with executive powers which can be held responsible for the leadership of road safety.

3.6.3 The role of co-ordinating bodies as initiators

At the risk of stating the obvious, co-ordinating bodies appear to be much better at co-ordinating ongoing activity than initiating activity. The latter can only happen if implementing agencies choose to increase their safety responsibilities. This, in turn, can be expected to require additional funding or a new mandatory requirement, neither of which most co-ordinating bodies (with their advisory role) appear to be able to deliver. As seen in Fiji as well as in New Zealand, NRSCs resourced with adequate funds are able to have an impact.

3.6.4 NRSC membership

NRSCs composition has varied widely with larger sizes found in LICs. Many LIC NRSCs included representatives with other priorities, little technical knowledge, and no financial resources, all which contributed to the lack of development in leadership of road safety There are often many members with little authority. Members are often appointed rather than elected. Both New Zealand and Australia have restricted their NRSC to the key implementing agencies while other interested organisations are represented on lower level committees or are allowed to make representation to the NRSC on a regular, if not

frequent, basis. Membership should be for those with authority or expertise and commitment.

3.6.5 NRSCs rarely given a chance

Many LIC NRSCs have not been given a chance to prove their effectiveness. Funding is minimal and often insufficient for even basic inputs such as staff salaries, let alone the production of educational materials or publicity campaigns. Before any organisation can deliver an effective programme, it will require both the relevant responsibility and appropriate resources. Only after these two inputs are provided, will any outputs be possible. Thus, funding is not a guarantee of effectiveness but it is a prerequisite for activity. Ghana appears to have learned this lesson with its proposed national road safety programme to be partially funded by the country's road fund.

3.6.6 The need for a road safety office

Regardless of which organisational structure is used, it will be necessary to invest resources in a support office. Having this role as additional to existing responsibilities is neither practical nor sustainable. Both technical and financial resources will be required by support offices. Resource requirements should be based on the TOR and the expected function of the support office. Funding will allow the purchase of technical expertise from the private sector for such activities as publicity campaigns, research, training, etc.

3.6.7 The need for multiple working groups

Road safety co-ordination cannot be achieved by a single senior-level committee. Strong NRSCs, i.e. New Zealand, Victoria (see Figure 3.1) Fiji, have been supported by other working groups, functioning at lower levels. Multiple working groups allow group size to be small which promotes accountability and different priorities to be addressed.

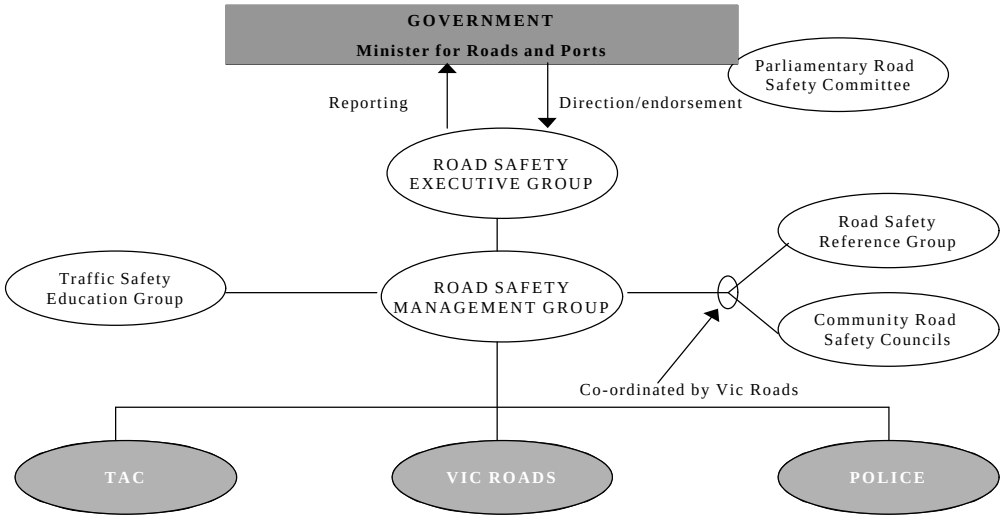

Figure 3.1 Victoria Road Safety Co-ordination

This set-up allows specific issues to be addressed in greater detail, much greater representation to occur and the NRSC to focus on approval rather than development of policy.

4 Road Safety Plans

4.1 Introduction

Over the past decade, clearly defined plans ('strategic' or 'action' depending upon the level of detail provided) have been increasingly used to co-ordinate the road safety activities being undertaken by the various organisations involved. Road safety plans were introduced at the local level in the UK during the late 1980s with the Local Authority Association recommending the development of a road safety plan as "good practice" (LAA, 1990). The UK Department of Transport commissioned a review of plans and a summary of the 40 recommendations presented in "Road Safety Plans: A Guide to Good Practice" are included in Appendix D. As road safety plans need to be put into local context to be practical, it was recommended that the first task should be to determine its specific purpose and for whom it is intended.

As part of their plan revision process, New Zealand's LTSA recently undertook a review of overseas road safety strategies, from Sweden, USA (DOT/NHTSA), Australia (both national and regional), European Union, Netherlands, UK. The LTSA's review notes covered the visions and philosophies adopted in the strategies as well as a summary of themes from the plans. Plans were reviewed on the basis of: general structure and principles, vision, targets, level of disaggregation, community, coordination arrangements, who was involved in the development, ownership of the strategy, performance monitoring, review periods, time frames, additional resourcing, document style/layout, and general comments. A summary of their findings is included in Appendix E.

This review of national plans follows the structure presented in the survey (Appendix A) and includes the areas of

- Background: if this is the first national plan, and what overall goal or casualty reduction targets, if any, were set.
- Plan content and development process: how the plan is structured, i.e. by priority area or sector, whether actions have been costed and if deadlines and responsibilities have been defined as well as the extent to which funding sources are identified. Plan development considers who contributed to the plan over what time period and what was involved in the approval process.
- Implementation and effectiveness: how many actions were undertaken and the impact they have had.

Of the 13 countries summarised here (See Table 4.1), 12 have developed plans to guide and coordinate road safety activity. The exception, Ethiopia, has had a draft national plan produced under an EC funded study. By now, many HIC countries are developing their third or fourth national programme.

The UK, with one of the world's best road safety records, had previously relied on local plans and has only recently produced a government road safety strategy. Regional plans have also been a standard feature in other HICs. South Africa has developed provincial plans and Indonesia is currently encouraging the development of provincial plans. Botswana is well known for having active regional road safety committees which have annual work programmes but most the road safety focus of most LIC, including their plans, has tended to be restricted to the national level.

Table 4.1 Road Safety Plan Key Features

	Australia	New Zealand	Sweden	UK	Chile	South Africa
Background a) national plan b) regional plans	 a) 1999 draft b) all	 a) draft Strategy 2010 b) community plans	 a) 11 point programme b) 7 regional plans	 a) recent Govt. Strategy b) many local plans	 *a) national programme*	 a) Strategy 2000 b) provincial plans
Plan content Time frame Structure Responsibilities defined Target dates Performance indicators a) casualty reduction b)action related Costs Funding sources	 1999-2010 7 Strategies N/a Yes a) yes b) to be developed No No	 2001-2010 Yes Yes a) yes Yes Yes	 No time limit 11 Problem areas Most Some a) yes b) from 1995-2000 plan No New financing researched	 2000-2010 10 themes Very few Broad categories a) yes b) not yet No No	 Annual 8 priority areas Yes Yes a) yes b) unknown Assumed Yes	 2000-2004 4 key focal areas Yes Yes a) yes b) yes Yes Yes
Development a) lead organisation b) consultation	 a) FORS b) National Road Safety Strategy Panel	 a) LTSA team b) widespread consultation and supporting documents	 a) SNRA b) SNRA consulted with Group	 a) DETR b) lengthy review and informal consultation process	 a) CONASET b) consulted over 200 groups	 a) MOT b) discussion document
Approval process a) lead organisation b) implementing agencies	 a) Standing Committee on Transport and Australian Transport Council	 a) Minister of Transport b) yes, contribute to development	 a) Govt approved b) SNRA proposal	 a) Govt approved b) not directly	 a) CONASET b) no	 a) Parliament b) yes
Implementation a) monitoring b) progress *c) increased investment*	 a) at 3 levels b) casualty reduction target met c) assumed	 a) quarterly reports by LTSA b) ambitious and needed funding c) increased investment	 a) yes b) much activity but casualty targets not met c) yes, budget has increased 3X.	 a) yes b) just approved c) expected	 a) annual review b) many actions have been implemented c) yes, but decrease from 1998 to 1999	 a) CSIR b) some parts, esp. Arrive Alive but RTMC slow c) expected with NRA and RTMC

Table 4.1 Road Safety Plan Key Features (continued)

	Bangalore	Bangladesh	Ethiopia	Fiji	Indonesia	Ghana	Zambia
Background a) national plan b) regional plans	a) state plan b) city strategy (Bangalore RS strategy)	a) second plan b) no	a) First plan drafted b) no	a) draft second plan b) n/a	a) project plan b) provincial plans being encouraged	a) new NRSC Strategy & Plan b) none	a) yes b) no
Plan content Time frame Structure	Not defined 13 priority areas	2002-2004 9 sectors	2 years 3 areas	1991-95 5 sectors	5 year plan 11 sectors	2002-2003 By lead organisation	1998-99 10 sectors
Responsibilities defined	Some	Yes	Yes	Yes	N/a	Yes	Yes
Target dates	No	Yes	Yes	Yes	Some	Yes	Yes
Performance indicators a) casualty reduction b) behaviour/action related Costs	 a) no b) no No	 a) no b) milestones No	 a) yes b) (in log frame Yes (in report)	 a) yes b) yes Yes	 a) no b) no Yes	a) yes b) to be confirmed Yes	 a) yes b) drafted Yes
Funding sources	Govt.	No	Proposed, Road Fund Board agreed to invest up to 3% in road safety	Yes	Yes	Yes, govt and oil companies	Yes
Development a) lead organisation b) consultation	a) NIMHANS b) 2 day workshop	a) TA and some sector working groups b) National workshop	a) 5 months TA b) interdisciplinary working group and discussed at workshop	a) NRSC & tech. assistance b) Min. of Works & Energy, presented at national seminar	a) WB project b) Directorate Land General Transport	a) NRSC with help from DANIDA b) public consultation	a) 3 months TA b) NRSC staff
Approval process a) lead organisation b) implementing agencies	a) NIMHANS b) no	a) NRSC b) No	a) Working group, Road Fund Board b) no	a) Central Govt Cabinet after NRSC b) in development	a) DLGT and MOC b) no	a)approved by Ministry of Road and Highways (MRT)	a) NRSC b) National Seminar
Implementation a) monitoring b) progress c) increased investment	a)w/campaign b) not much c) no but BATF plan to focus on costs & funding	a) expected b)some actions donor financed c) govt starting to invest in safety staff	a) to be Road Safety Office responsibility b) not yet approved c) not yet but demand increasing	a) by NRSC b) Many components implemented c) yes, from safety levy	a) no b) some under second WB loan c) not yet	a) NRSC b) new plan but Nat'l Awareness campaign started	a) yes, by NRSC b) little progress even in priority areas c) not yet but expected

4.2 Plan content

The time frames of the new HIC plans tend to be longer, often a decade, whereas LIC plans are often two-three years and occasionally five years. Shorter plans are preferable where new work is being introduced and resources and capabilities are still largely unknown.

Plans have often been extensive with multiple themes and numerous proposed actions. South Africa and Fiji have narrowed their priorities with South Africa's draft Strategy 2000 organised into four key areas. Fiji's first plan focused on five areas with priority given to the four key sectors of coordination and funding, crash data systems, traffic law enforcement and road safety engineering. The fifth component included actions in the other sectors but on a much more limited scale. A similar approach has been proposed for Ethiopia with a few priority sectors and "starter action" in the other sectors.

HIC plans are organised according to national priorities whereas the LIC plans, which are often developed by foreign consultants, tend to follow a standard sector based approach. South Africa has customised its plans to highlight priority problems. Locally determined plan structure and content can be assumed to influence ownership. The local plan structure decision should also consider what is currently being used for other multi-sectoral plans which have been implemented.

Time deadlines were included in almost all plans but those of LICs more often defined responsibilities and included action costs whereas those of HICs did not. Likewise, funding sources were more often (but still inadequately) discussed in LIC plans. This may be due to the different development stages with existing budgets in place in HICs whereas in LICs, new responsibilities and work programmes will be introduced and there will be more pressure to develop new funding sources. New Zealand was the only country found which included a detailed explanation of the expected funding sources.

4.2.1 Targets and performance indicators

While action plans from New Zealand and Sweden have included behaviour performance indicators in addition to casualty reduction targets, many LIC plans have only included casualty reduction targets. This is unfortunate for the following three reasons

1. Official casualty statistics are often misleading due to under-reporting and data fluctuations.
2. Upgrading the road crash database is a standard first priority and this may lead to an increase in reported casualties as reporting procedures improve.
3. Many actions involve the development of skills and systems which will not produce a casualty reduction in the short term but are required for sustainable casualty reduction.

Sole reliance on casualty reduction targets also results in a prevention-only approach whereas the casualties which are not avoided should be seen as part of the overall problem with their treatment meriting consideration. The reduction of the social cost of road crashes has been recommended as New Zealand's top road safety objective (See Box 4.1)

Other countries, i.e. Sweden, Fiji, Armenia, have used performance indicators to measure progress whereas in many other countries, they were included in the draft stage but were never monitored.

Box 4.1 New Zealand's Target Hierarchy

The proposed Strategy 2010 includes four levels of targets with social costs, i.e. material losses and human costs, at the top. Next comes final outcomes which consist of the fatalities and serious injuries and account for the majority of social costs as damage only crashes are not included as their data are unreliable. Intermediate outcomes include performance indicators such as average speed, seatbelt usage, proportion of drunk drivers, etc. Outputs, the "grossest" target and easiest to measure, are the physical deliverables, i.e. number of hazardous locations improved, number of police trained, or can be milestones to what is actually being achieved.

Separate social cost and final outcome targets will be developed for the different road user groups and for the individual regions. Output targets will be finalised after consultation and the participating agencies will develop work programmes showing what and when physical outputs will be delivered (NRSC, 2000).

For further details, see Road Safety Strategy 2010 or contact its publishers, the LTSA at www.ltsa.govt.nz.

Sweden's 1995-2000 road safety programme included the following performance indicators:

- Proportion of speeding violations compared with previous year
- Proportion of speeding violations and vehicle mileage which exceeded the speed limits on state roads
- Change in average speeds
- Use of seat belts (by driver and front-seat passenger)
- Use of cycle helmets
- Number of drink driving offences
- Interest in traffic safety by public
- Politicians' and decision makers' perceived willingness to invest in traffic safety
- Number willing to pay more for petrol if money is spent on road safety measures
- Headway measurements
- Other traffic offences
- Proportion of public trained in first aid
- Rescue time for road crash casualties
- Proportion of motor vehicles meeting passive safety standards

SNRA also undertake an annual road traffic safety questionnaire which includes questions on use of lights by cyclists and the use of reflectors by pedestrians.

4.3 Development process

One major difference noted was the length of time involved in the development of plans. HIC plans often took several years to develop and involved extended consultation process, with discussion documents produced. LIC plans, on the other hand, were often developed in a matter of months, with most of the work undertaken in weeks. This was due to plan development being led by foreign consultants working on donor funded projects who were often restricted to short inputs. Those countries with an active road safety office i.e. Chile, South Africa and Fiji, have had longer plan development stages and involved greater consultation.

Sector working groups were occasionally established to provide local technical input and LIC plans were often presented and discussed at national workshops. However, implementing organisations rarely played an active part in developing what was to be their future work programme.

4.4 Implementation

LIC plans are approved by the lead Ministry or the NRSC but this does not involve a guarantee of funding and many LIC plans have had little work implemented. Monitoring was given more priority by HICs with quarterly reports and annual reviews undertaken. Road safety milestones and actions were monitored by Fiji, with an example of one of its frameworks shown in Figure 4.1.

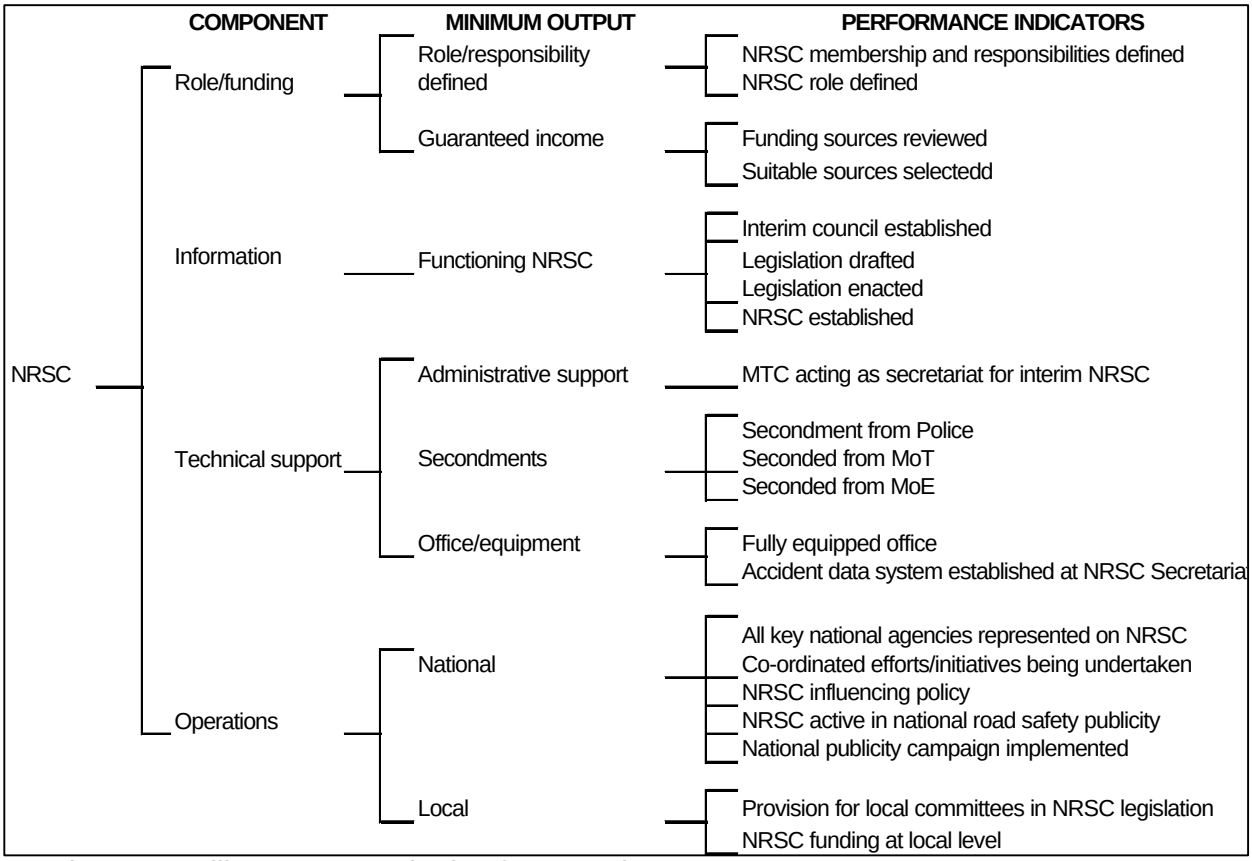

Figure 4.1 Fiji's NRSC monitoring framework

Donor assistance, both funding and technical assistance, often stopped at the draft plan production stage despite long lags between approval and implementation. Although many plans involved the establishment of new units, i.e. traffic engineering, data analysis, Road Safety offices, the medium to long term technical support required; together with institutional strengthening was rarely provided. Such tasks as defining job responsibilities, introducing training and work programmes were left to be developed by local staff with limited, if any, relevant experience.

4.5 Effectiveness

LIC plans tend to remain theoretical whereas HIC plans have traditionally been implemented. However, casualty reduction targets have not always been met. Early targets were achieved in New Zealand and Australia while Sweden and the UK have not met the ambitious targets set. The UK chose an overall casualty reduction target (33 per cent reduction) which was not met, largely due to growth in traffic, A reduction in injury severity did take place with fatalities and serious injuries decreasing by more than the targeted one-third. It would be unfair to criticise a country for not achieving its targets if they were perhaps over ambitious and if the country did improve its overall road safety record.

In LICs work programmes were drafted for new units with little experience and backing whereas others such as traffic police were having their priorities drafted by others. The result was that the work expected to be undertaken did not involve the participation or agreement of those who would actually be doing the work. Nor were funding need clarified with no resources allocated to the additional tasks specified.

4.6 Lessons learned

4.6.1 Over ambitious plans

LIC road safety plans tend to contain multiple recommendations for many sectors, all of which are unlikely to be implemented. While priority problem areas were identified in several HIC plans including the UK and Sweden, LIC plans tended to be structured by road safety sector and include several actions for each sector.

4.6.2 Lack of focus on implementation

The lack of focus on implementation contributed to plans being unrealistically extensive. While priority was often given to public consultation with national workshops conducted, there was less attention given to the implementing organisation and how plan activities were to be delivered. Road safety plans were often prepared as independent documents and were not coordinated, let alone integrated within the implementing organisation's work programmes, budgets and/or longer term development plans.

While many LIC plans were developed with donor support, this assistance often stopped with the production of a project output, i.e. a draft national plan. It did not continue during the transition period when the plan would be finalised and implemented and when a road safety champion was frequently needed.

4.6.3 Need for investment in local counterparts

Often in LICs, the only staff working full time on road safety are short term foreign consultants and thus the impetus for road safety improvements leaves the country when they do. During the development as well as implementation stage, road safety often remains an additional, and thus secondary, responsibility for many of the key officials involved.

4.6.4 Lack of focus on costs and funding

Greater attention appeared to be given to action costs within LIC plans than HIC plans although few of either focused on funding sources. Unlike other road safety sectors which use specialist advice, fiscal budgeting specialists have been rarely included on donor projects where plans have been developed. In a world where funding scarcity dominates, the lack of attention on costs and funding sources will inevitably contribute to LIC plans being seen as theoretical documents rather than working guidelines.

Box4.3: Pro Vulnerable Road User Transportation Strategy: York (UK)

In 1989, the city of York, UK, began to introduce a transportation strategy based on a hierarchy of road users which put pedestrians, disabled and cyclists at the top and car commuters at the bottom. Measures included substantial traffic calming, park and ride, city centre pedestrianisation and the introduction of pedestrian and cycle networks. Compared to 1981-85, York had reduced total casualties by 45% by 1995. While cycle and pedestrian casualties had been reduced by more than one-third, modal usage had not reduced thus demonstrating a real reduction in risk (UK's road casualty reduction is criticised for being partly due to pedestrians being too scared to walk). York now monitors the number and length of walk and cycle trips as positive performance indicators (Road Danger Reduction Forum, 1999).

4.6.5 Appropriate Targets

Box 4.3 includes the example of a city which has chosen to put the safety of vulnerable road users ahead of the convenience of motor vehicle occupants, especially car occupants. A similar approach has been adopted for south east Queensland (Australia) where long term key targets (25 years) include the reduction of the share of private vehicle trips and an increase in the proportion of walking and cycling trips. Increases in the proportion of trips by public transport and in the average vehicle occupancy are also targeted.

South Africa has also relied on performance targets whereas other LIC plans have included them in the development stage but without actually applying or monitoring.

4.6.6 Longer term development process

The development of national road safety strategies has taken years in HICs but is often expected to be accomplished in a matter of months by donor financed projects, and led rather than assisted by foreign consultants. This short-term approach has inevitably led to superficial plans being developed and forgotten.

4.6.7 Effective technical assistance

In order to make effective use of donor funding with road safety plans and programmes, the following should be provided:

- A practical budget estimate agreed by key ministries and donors
- Fiscal specialist to assist with developing sustainable funding sources
- Local counterparts in key public sectors assigned to project and paid for their efforts
- Project terms of references and funding continues beyond the planning stage
- Sector working groups allow representation of vested interest groups
- Full time local road safety staff are adequately resourced
- technical assistance

4.7 Examples of Good Practice

Integrating plan recommendations

The work on the Fiji National Road Safety Plan did not cease with the provision of government approval. The actions were incorporated into the work programmes and development plans of the implementing organisations, a move which greatly enhanced their chance of being delivered.

Funding

The transfer from theory to practice requires resources and an early priority action in Fiji was the establishment of a local sustainable funding source with the introduction of a mandatory safety levy on motor insurance premiums. New Zealand and South Africa have also secured local sources for road safety programmes. South Africa established mandatory third party insurance premiums collected through the fuel levy with a proportion going to road safety. This avoided the problem faced by many LICs with many if not most of motor vehicles not being insured, despite motor insurance being legally required. This approach also has the advantage that road safety funding increases with increasing motor vehicles and traffic.

Practical priorities

Whereas all road safety sectors need strengthening, they cannot all be improved at the same time, nor do they have equal merit. The road safety plan in Fiji focused on four sectors in the first phase and included actions in the remaining sectors in the second phase.

Road safety plans should be dynamic documents which can be revised as need be. South Africa revised its approach when it realised its overall strategy was not being implemented. It focused on what was likely to succeed and delivered the Arrive Alive programme.

Local ownership and community involvement

New Zealand and Australia have given much priority to involving the community in the improvement of road safety. A local area focus has also been seen in other countries. Local road safety plans were first introduced in the UK and preceded the national strategy by almost a decade. Norway too is believed to have a local road safety plan focus with the national strategy being based on the actions proposed in the local plans.

Box 4.4 Victoria Community Road Safety Councils and local campaigns

Over 20 Community Road Safety Councils (CRSC) are functioning in Victoria. They are funded by VicRoads but they are independent with their campaign programmes determined by local needs. They are also supported by local businesses and community groups. CRSC can receive up to $20,000 from VicRoads for their annual work programme (based on campaign submission) but also eligible for more as sponsorship will be matched up to a maximum of $15,000 (Walking Safely, Victoria website)

National objective and local priorities

Despite having the world's best traffic safety record, the Swedish government decided it owed a safer transport system to its citizens and has thus embarked on a more ambitious programme than ever before. It also showed innovative thinking by deciding the traditional casualty severity groups were inappropriate. A new health index is being developed and under Vision Zero, the priority will be on deaths and grievous injuries resulting in serious disability.

Ethiopia, on the other end of the road safety progress meter, has been recommended to adopt a more modest and practical objective with their first national road safety programme intended to develop local skills and systems required to reduce the risk and consequences of road crashes.

Public health approach and coping strategy

Road crashes are a leading cause of death and disability among those in the prime of life in many countries. Like other public health problems, there should be not only a prevention strategy but also a coping strategy as to how those casualties who are not prevented can be helped.

Most national plans included recommendations for the medical sector and the treatment of casualties. Sweden aimed to reduce the rescue time for road casualties and increase first aid knowledge among the general public. This is especially important for LICs where casualty reduction strategies may not be successful for some years.

5 Funding

Most road safety activities are traditionally funded from a central government general revenue budget. This is then distributed to various sectors of road safety either identified specifically (e.g. engineering local safety schemes) or as part of the overall activity of a particular sector such as traffic policing or education. Detailed information on spending for specific aspects of road safety is rarely documented, but road safety tasks are often included in more general expenditure, for example with traffic engineering or law enforcement.

Where expenditure is explicitly linked to road safety it is mostly to be for remedial works (eg treating blackspots) rather than for crash prevention. There are examples of LIC NRSCs which have received modest funding from their governments, but separate road safety budgets are not common.

Whilst road safety activity is generally seen as a public sector activity, it must not be forgotten that road users in general typically pay for driver training, licensing and vehicle inspection. In the UK private sector payments are estimated to exceed public expenditure on road safety (See Table 5.1). Arguably this expenditure addresses crash prevention rather than safety remedial measures.

Table 5.1 UK Road Safety Expenditure

Expenditure	£ Mil
Total Public and Private	2,177
Total Public	944
Ambulance & hospital services	474
Enforcement	271
Local Safety Schemes	90
Driver and Vehicle Licensing	73
Education	29
Transport of dangerous goods, publicity and vehicle standards	7
Total Private	1232
MOT & other road worthiness testing	683
Driver/rider training and testing	469
Driver licensing	38
HGV/PSV operator licensing	27
Enforcement	15

Source: PACTS, 2000

Research from the case study countries and from elsewhere has shown that Public sector funding for road safety can be derived from alternative sources to general government revenues. These sources include:

- Levy on insurance;
- Hypothecation/Administrative Costs;
- Road Funds; and
- Private sector (business) sponsorship.

If taxes or levies are raised under government's general powers then it may be difficult to earmark those funds for specific purposes, especially if that implies a reduction in expenditure elsewhere. If the funds are raised by the private sector, then this problem may not arise, but most government departments cannot accept direct contributions from outsiders. In order to allocate road user charges (taxes) directly to a specific activity (such as road safety) then legislation is likely to be required and to avoid reductions of expenditure in other sectors the charges must be wholly additional.

Examples of good practice are identified and discussed below, except for business sector participation which is discussed separately in the next Section of the report.

5.1 Good practice examples

General Revenue

Reviews of the case study countries showed that the majority of road safety activities such as engineering improvements and traffic law enforcement are funded from the general

revenue budget. Whilst specific budgets for road safety exist in some countries, to fund for example the National Road Safety Council and its activities, most LICs Road Safety Councils receive very little. Elsewhere, road safety is provided for as an element of other activities such as road maintenance, education or traffic policing, but there are rarely specific budgets for road safety. Of course not all budgets will neatly identify the contribution to reducing the effects of road crashes. Ideally Road Safety Plans should provide the mechanism for identifying a need to move expenditures between budgets and to track their effects.

Insurance Levy

Finland, the State of Victoria in Australia and the Province of Quebec in Canada all levy a fee on vehicle insurance premiums with the generated revenue earmarked for investment in road safety. Vehicle owners are required by law to have insurance for their vehicles and in addition, have to pay a further tax. This surcharge can therefore be considered as a road user safety fee. Insurance and premiums are related to accident costs and the use of part of the premium to provide road safety measures to reduce accidents and their severity, (and hence insurance costs) is justifiable. As with many insurance operations, the cost of the premium, and hence any additional tax, will reflect driving behaviour, thus creating a financial incentive for driving safely. As noted by Wetteland and Lundebye, an additional surcharge on safety requires public acceptability. The potential for this can be enhanced by ensuring that no exception to this rule exists, for instance as happens with the exemption of government vehicles from insurance requirements in some countries, such as Bangladesh.

Box 5.1 FINLAND

Dating back over 40 years, Finland is believed to have been the first country which used insurance premiums to finance road safety. Set at a nominal amount (1% of premiums), it has been reported to raise $8 million per year for education and publicity campaigns (ADB, 1998). The Finnish insurance system has premiums set by the Ministry of Social Affairs, unlike in the UK where the insurance companies adjust premiums to reflect liability cost. The Finnish system, by setting premiums centrally, puts an onus upon the insurers to hold premiums down and to do this, the insurers make a considerable effort to reduce crash rates by providing research and safety information to their customers. Without such incentives, insurance companies may show less concern about increasing crash rates, and may fail to make any significant investment to improve road safety. Increased crash rates and the consequent increased payouts are offset by increased premiums. The motorist therefore pays for the higher risk; as a result, no effort is made by the insurers to improve the environment for the motorist.

A road safety levy was originally set at 3% of third party insurance premium in the State of Victoria, Australia, but has been since increased to its current level of 10% (approximately US$20 per motor vehicle). A trust fund has been established which has invested more than AUS $12 million over its first 6 years of operation on the support of community road safety, accident prevention, use of safety equipment, care of the injured, bereaved and traumatised as well as research and evaluation (Motoring Directions, Summer 1998/99).

The National Road Safety Commission Act of 1999 in Ghana provides for a levy on mandatory third party insurance (Ross, November 1999). In Zambia, there is a proposal to apply a 10% levy on (compulsory) third party insurance, which would raise about US$1 million per annum, but this is not yet passed into law. An insurance levy has also been recommended for adoption in Ethiopia, one of the few remaining countries without mandatory third party motor insurance. In Fiji, as part of the Fiji Road Safety Action Plan, funding mechanisms were included in the legislation so that a levy of 10% is applied to all

third party insurance policies and these funds are handed over to the Safety Council for its activities. The government agreed to extend this requirement to all government vehicles although in some LICs, including Bangladesh, government vehicles are exempt from insurance requirements.

Insurance premiums are also used to fund education and publicity programmes in the Province of Quebec, Canada, whilst Hawaii imposes a $2 surcharge to finance driver education programmes. Insurance premiums are also used to support the Korea Traffic Safety Association. In Poland a special fund, derived from 1% of insurance revenue, has been set up to finance road safety projects.

Care must be taken in adding charges to insurance premiums, as this may reduce take up and increase the risk of evasion where mandatory third party insurance is not widely accepted.

Hypothecation/Administrative Costs

Road user fees are already used in some cases to meet costs of road infrastructure and traffic management. Charges to use a highway system as well as vehicle and driver licensing are such forms of user fee. More recently, the use of traffic fines to finance road safety activities, particularly law enforcement, has come into effect in some countries.

Hypothecation is the principle of allocating revenues (eg from traffic fines) for a specific purpose - such as law enforcement. In this example the argument is that road users behaving in an inappropriate or illegal manner, themselves pay for the costs of enforcement - a similar principle to 'the polluter pays'. Administrative costs of the police enforcement can be recovered in addition to the fine being paid to society via the Treasury. A problem with this approach is that government revenues of all kinds (taxes and fines) generally accrue to a consolidated fund and are then allocated between ministries as part of the annual budget process. Thus, if fines are allocated specifically to law enforcement, then there will be a reduction in expenditure elsewhere. The key is to make the hypothecation 'revenue neutral'. In the example of traffic fines, if the additional costs of enforcement can be recovered from the fines, then there is no drain on other parts of the national budget in order to spend more on road safety.

Traffic fines are being used to finance road safety in some countries. In Western Australia, one-third of camera fines (both red light and speed) is paid into the Road Trauma Trust Fund which is used for road safety initiatives. Seven States in the USA are reported to be using traffic fines (portions) for law enforcement training. Surcharges are imposed on hazardous moving violations in two States, with Mississippi allocating the funds for emergency medical services and New Mexico donating the money to a Traffic Safety Education and Enforcement fund (Froning, 1992). Vietnam is the only country known to allocate all of its traffic fines to road safety. Traffic police in Malaysia and the Philippines are believed to be allowed to retain a portion of traffic fines. This policy was recently rejected in Ethiopia, despite the precedent of overloading fines being designated as one of the sources of the Road Fund. Trials are currently on-going in the UK with revenue earmarked for additional camera (red light and speed) provision in hazardous locations. In the UK, all costs need to be recovered over the year and value for money, presumably in terms of accident reduction, has to be demonstrated.

According to Creightney (1993), the main benefit of hypothecation is in increased certainty about the funding available for investment and maintenance. However, “there is no clear evidence that hypothecation actually leads to sustainable increases in funding”.

Road Funds

Gwilliam and Shalizi (1997) define a Road Fund as “an institutional device through which a selected stream of revenues is put at the disposal of a government road department or agency without being subjected to general budget procedures and reviews.” This finance is therefore outside of the control of the Ministry for Finance or Treasury, with revenues being obtained from a number of areas associated with road transport. Similarly, the money can be spent on any aspect of road transport, including road safety. These funds offer an attractive opportunity to establish a flow of funds into road safety, however their allocation should be subject to endorsement by representatives of road users, through the National Roads Board.

Revenue for New Zealand's initial road fund, established in 1953, was generated from fuel excise duty, vehicle registration fees, heavy traffic fees and a mileage tax. This was later rationalised to include only fuel excise and road user charges (1979). Fees were paid into a central government account and expenditure from this account were road related only. The Land Transport Fund was created in 1989 and was required to meet central government's contribution to passenger transport funding, traffic law enforcement by the police, the operating costs of the Land Transport Safety Authority (LTSA); and the costs of collecting National Road Fund revenue.

Box 5.2 Fiji

An exclusive budget, obtained through an insurance levy (60%), general sponsorship (20%) and specific sponsorship (20%) has been set aside for road safety activities in Fiji. A 10% levy on third part insurance policies exists in order to provide part of this funding. The NRSC Finance Committee draws up the annual budget in terms of income and expenses and this is duly considered and approved by the full NRSC. Road safety activities are distributed as per an agreed programme that is drawn up following submissions made to the Council.

A dedicated budget for road safety engineering activities also exists in Fiji, as part of the Public Works programme. In addition, part of the road maintenance budget from the general Government budget can be spent on road safety initiatives such as infrastructure improvement and pedestrian facilities. Similarly, the Road Fund can be used for road

Fletcher and Rendall (1997) state that the objective of funding all road-related expenditure in New Zealand from the same source was “to optimise the allocations to each activity”. They go on to say that “this objective has only been partly achieved, because of the difficulty experienced in developing a rational agreed process of evaluating the benefits and costs of each activity”. Once the cost of the Polices’ and LTSAs’ road safety activities have been met from the National Road Fund, any additional revenue can be used by the associated Transfund (national roads account).

In Zambia, the Road Fund legislation specified the financing of road signs (Balcerac de Richecour and Heggie, 1995). One of the funding recommendations from the Zambia Road Safety Study (1998) was for 5 per cent of the Road Fund to be dedicated for road safety engineering measures (Aeron-Thomas, 1998). The Road Fund has begun to invest in traffic enforcement activities but has yet to provide any financial support to the NRSC or the improvement of hazardous locations, a road safety engineering priority.

The Road Fund in Ethiopia specifically states road safety measures to be one of the allowed expenditures. . Up to 1999, there had only been one request for road safety financing and this was for the modernisation of the traffic signals in Addis Ababa. As this

was more of a traffic management improvement than road safety, the request was rejected but a revised request for traffic sign and road marking funding was approved (TRL, 2000). While 'earmarking' a small percentage to road safety was initially rejected, since 2000, the Road Fund Board has agreed to allocate up to three per cent of its earnings to road safety improvements. Approximately US$ one million was available in 2001 for road safety, although the funding process had yet to be standardised.

The Road Accident Fund in South Africa has also been the main sponsor of the recent national "Arrive Alive" campaign. The Fund was originally created to provide compensation to road accident victims, drawn from levies on fuel sales and from investments elsewhere. In order to reduce the number of claims the Fund agreed to the investment of 2.5% of the fuel levy income in road safety measures, with the aim of reducing road accident casualties.

The use of licensing and registration fees appear popular in the US as a source of road safety funding, where they are used to help finance emergency medical services and/or the licensing agencies and training programmes. For instance, Virginia collects an additional fee of US$2 on all motor vehicles for a special fund for emergency medical services. It also imposes a US$3 fee on the motorcycle registration fee for the Motorcycle Rider Safety Training Programme. Charging drivers/riders for training programmes was reported in over 15 States (Froning, 1992).

Botswana's main source of funding for its NRSC is believed to be its safety surcharge on motor vehicle registration. This surcharge was increased by a factor of five (currently 5 pula - approx $1) some years ago. Papua New Guinea is also known to collect road safety funding through a surcharge on the vehicle inspection sticker. Tanzania has reported considering a surcharge on motor vehicles to fund road safety. Whilst this approach appears attractive, license fees, inspection fees and suchlike are frequently subject to evasion and abuse. Thus increasing the charge may lead to even greater avoidance and hence they are not necessarily an effective way of raising revenue.

In addition, potential road safety funding is also possible using the road maintenance budgets that may have been formed from a Road Fund. The assigning of a small proportion of the overall budget for use on road safety would be extremely beneficial; the National Road Maintenance Fund in Jordan had a requirement to provide funds for "the implementation of selected road safety projects." It should be noted that some activities in Chile considered as maintenance, such as road markings and road signs, will offer road safety benefits, as is claimed in Chile. Most recent road funds have a standard clause in their legislation which empowers the board to "finance such road safety projects as the Board may determine." The problem appears to be that the NRSC, or equivalent, rarely seems to ask for funds, or puts forward an inadequate case such that the Board refuses to allocate them any money.

5.2 Lessons Learned

Given a government's ultimate responsibility to protect its citizens, it is not unreasonable that objectives and targets for road safety should be set by government. It follows that allocation of finance for at least some of the activities needed to achieve the stated targets should therefore also come from central government. However, public sector funding for road safety should not be restricted to the road authority; the Education, Health and Justice departments have financial contributions to make. In the UK, half of all public road safety expenditure is estimated to be spent by the health sector on treating the results of road accidents, rather than on their prevention. Whilst health funding may be in short supply, a

proportion of health funding spent on preventive measures may have financial benefits in the long term.

Wetteland and Lundbye suggest that infrastructure design and construction, education and law enforcement can be considered to be part of a basic government service and as such should be provided from the government budget. Indeed, the provision of NRSCs under the control of a government department indicates that road safety is often recognised to be a government responsibility. Nevertheless, road users do have direct responsibilities for their own and others' road safety and should cover specific investments and services needed to attain the required standards (eg in terms of driver licensing, training and vehicle inspections). Sustainable road user charges can be levied through a range of measures such as user fees (driver and vehicle licences, road tax), insurance premiums, and private sector contributions. User charges should be used to establish and maintain driver and vehicle standards along with safe infrastructure design.

Specific recommendations by Wetteland and Lundebye include :

- The public road sector agency should cover infrastructure costs and specific services;
- Road users should pay for costs associated with reducing crash risks (e.g. driver training/testing and publicity campaigns);
- Road users tariffs could be used to improve hazardous locations; and
- Levies on insurance premiums could be used to finance co-ordination, awareness campaigns, education, enforcement equipment and research

They also suggested that multi-lateral lending institutions and bilateral donors “may provide more funds for road safety purposes if governments can demonstrate real commitment to sustainable road safety policies, clear goals/targets and mobilise/use effectively domestic resources”. One way in which governments will attach greater importance to road safety is through a clear understanding of the total cost to the nation of road accident costs and the true value to the country of road accident preventive measures.

Allocation of sector budgets from general revenues is effective in some HICs, examples being the UK, Sweden and New Zealand. In general terms these are associated with some or all of: strong political commitments; legal backing; ring-fenced items in budgets; good planning; and target delivery - all in the context of strong economies.

Funding is a necessary but not sufficient condition for the effectiveness of road safety activities. Adequate funding will also attract enthusiastic staff and allow their professional development.

There is little evidence that LICs have given sufficient priority to road safety for any reasonable level of budget to be committed. Where NRSCs have been established, and in some cases given statutory duties, they have not been allocated sufficient resources from general revenue sources to fulfil their duties. On the other hand there are examples of success from more direct sources of funds, such as levies which go to a dedicated purpose.

Various forms of sustainable revenue for road safety have been identified and are used in some countries. For instance, the Road Traffic Safety Association in the Republic of Korea is funded from an assortment of small levies on fuel tax, insurance, tyre manufacturers' profits and expressway authority incomes. It is believed that these sources provide about US$100 million per year for road safety activities. In Fiji, insurance levies and commercial sponsorship make up 90% of the National Road Safety Council budget.

The explicit funding of road safety from existing or new revenue sources requires legislative changes, and may require alterations to the way governments perceive the importance of road safety. Such statutory changes will require identification of the funding objective and targets as well as how the funding is to be managed. According to Fletcher and Rendall, the lessons learned from New Zealand for a successful Road Fund include:

- A need for adequacy, certainty and predictability of revenue;
- Reduction of political pressure on both the Minister and the funding agency can be achieved by having a nationally recognised basis for project evaluation and fund allocation; and
- The separation of funder, provider and deliverer promotes much greater accountability and an improved, more efficient, delivery.

They conclude that the "the key to a successful Road Fund is revenue. Without revenue adequacy, certainty, predictability and collectability, a Road Fund is destined to face severe difficulties in its continued operation".

Zietlow and Bull (ref) argued that, as well as addressing the current financial situation with regards to road maintenance, it is also necessary to look at the institutional system. One way of achieving institutional reform is to create an autonomous Road Fund Board with active road user participation. Financial management systems need to be able to utilise private as well as government funds, which can be perceived as a problem in LICs where government agencies may not always be trusted with private sector funds.

At present, road funds established in LICs, despite the mention of safety in their enabling legislation or proclamation, have invested little, and often not at all, in road safety activities. Whilst part of the reluctance could be due to lack of agreement on which road safety activities qualify for road fund financing, i.e. "hard" engineering measures or "soft" education and publicity measures as well, it is generally the case that insufficient funding is available to meet all demands and expectations. No specific funding mechanism may be in place and without this guaranteed income in place, road safety activities will suffer. Road Safety Action Plans should directly consider revenue generation and funding availability as one of their key aims.

Private sector participation, as discussed in the next Section, may assist revenue generation, albeit on a smaller scale than potential funds invested by government or road users.

An active partnership between government and the insurance industry should be sought. Insurers' support and commitment to road safety will probably be greater if they are involved in the organisation of road safety, and therefore able to help determine the use of their funds. Accordingly, the insurance industry should be represented on the finance side of any national road safety committee.

6 Business Sector Participation

6.1 Introduction

Some road safety services are operated by the private sector on a commercial basis such as driver training and vehicle inspection most commonly. These are commonly provided by the private sector in HICs, subject to standards set by regulatory bodies. For example, in the UK, only Approved Driving Instructors (ADI) are legally able to provide driving instruction for learner drivers attending driving schools. The process of regulation and maintaining standards for ADIs is a responsibility of a government Agency, the Driving Standards Agency. Parallel procedures apply to vehicle inspection, where the Vehicle Inspectorate is responsible for the licensing and standards of those garages and inspectors authorised to carry out the annual motor vehicle inspections. In developing countries, vehicle inspection is generally carried out by government bodies. Whilst private sector driving schools and instructors dominate the driver training options in most LIC countries, they generally operate on a small scale and are not subject to rigorous standards.

Given the scale of expenditure on driving instruction and vehicle inspections in HICs, it is probable that these activities represent the great majority of private sector involvement in road safety, at least if measured by money spent. However there are many documented examples of other forms of private sector investment and involvement in road safety activities, and it is these which the rest of this section addresses. A range of private sector involvement in road safety can be found in HICs and it is becoming more evident in LICs. The growing influence of GRSP should increase this still further, both in terms of investment and particularly in providing private sector management expertise.

This section provides a number of specific examples of business sector involvement in road safety, over a range of areas. Details of the programmes of some of the companies identified as being active in this field are contained in Appendix F. It should be noted that this list is not intended to be exhaustive but serves to indicate the type and range of companies and their involvement, both in low and high income countries.

Whilst virtually all private sector companies would potentially benefit from an improved corporate image as a result of road safety activities, many businesses have a direct financial incentive in promoting road safety. Motor insurers are an obvious example, as are businesses with large fleets or expensive vehicles, which benefit from reducing crashes involving their own vehicles. Such companies increasingly adopt safety-conscious policies aimed at reducing their losses, often focussed on driver testing and training.

The private sector can be involved in a wide range of road safety activities. Based on the information gathered for this report, business involvement in road safety has been categorised into the following types:

- Management support;
- Internal investment;
- Sponsorship;
- Research and Design; and
- Professional Associations.

6.1.1 Business Goals

For business to invest in road safety there has to be a return on the investment. This can be achieved from reduced costs where the actions are essentially inward looking, or by improving long term market share where the actions are external. These general reasons can be classified as follows:

- cost savings, although these tend to be direct costs such as vehicle repairs rather than employee lost time and output;
- sense of social responsibility and general company safety culture;
- legal requirements under occupational health and safety laws where the vehicle is considered a place of work and training in its appropriate use is necessary;
- company reputation and quality assurance requirements ensuring a product or person is transported safely within the required time to the desired location; and
- marketing and branding.

6.1.2 Cost Savings

Large fleet operators generally cover a substantial proportion of the costs of minor crashes themselves, and insure against large losses. Motor insurance premiums often increase as a result of a bad claims record, with premiums based on claim experience, crash frequency, fleet profile and driver records. Blameworthiness (for a crash) may not be considered in determining future premiums. Driver training may help to minimise the risk of involvement in future collisions and therefore reduce the cost of the insurance premium and the internally borne costs of minor crashes. Other direct cost savings that may also occur from safer driving practice are a saving on tyres, and improved fuel economy.

6.1.3 Occupational Health and Safety

Many HICs have legislation and regulations covering 'Health and Safety at Work' to ensure that employees exercise a duty of care for their employees and the general public who may be put at risk by the company's operations. For example, a duty exists under the Health and Safety at Work Act in the UK for employers to ensure, so far as is practicable, the health, safety and welfare at work of all their employees, plus to protect the health, safety and welfare of those not in their employment. Employees are required to take reasonable care. The Land Transport Safety Authority in New Zealand has produced guidance for fleet managers on formulating a safe driving policy and information on new car safety to address similar Occupation Health and Safety requirements. Such statutory requirements ensure that both employers and employees have legal obligations affecting the choice and use of vehicles and equipment that they provide. Vehicles coming under this law are in effect a form of machinery and equipment, which should therefore be of safe design, be safe to use and well maintained. Driving policies and guidelines with regards to safe working practices should also be taken into account and address issues such as driver’s hours of work, vehicle condition, vehicle safety, as well as driving licences and drinking and driving.

6.1.4 Safety Culture/ Social responsibility

Whilst health and safety requirements are imposed on businesses by national legislation, they can result in a business developing policies and expertise which go well beyond the legal requirements. This may result in a safety culture that offers additional benefits to the business, and by influencing others, such as contractors to the business, can have wider safety benefits. The actions of some oil companies summarised below are cited as examples of good practice in this respect.

Following recent policy reviews in the UK regarding road safety, one company has removed the word “accident” from its vocabulary as it implied “happening without apparent cause or

reason". This was felt to be at odds with their objective of training drivers in hazard awareness and crash avoidance. Similar approaches to safety can be found where businesses set themselves the goal of no work-related accidents occurring. In Sweden, the National Society for Road Safety (NTF) has promoted the adoption of a road traffic safety policy by companies. In 1999, 51 companies and associations were reported to have adopted a traffic safety policy with a further 107 in the process of developing a policy.

6.1.5 Company Reputation/Quality Assurance

European research, identified by Monash University (2000), indicates that fleet safety is part of quality management in Sweden. The need to ensure that 'goods and people arrive at the right place at the right time in the right way' has a safety implication. The shipment needs to be transported "without danger or serious injury or damage to the goods or the environment in connection with the transport." Quality assurance from a road safety and environmental consideration involves "influencing the need for road transport, how road transport is implemented and the choice of vehicle, equipment and fuel."

6.1.6 Marketing and branding

Some companies use their reputation for safety as part of their brand identification and marketing. Volvo has a long-standing reputation for the passenger protection offered by their vehicles, which is used in marketing Volvo vehicles. Reflective materials developed by 3M and used in their signs and road markings are also marketed on the basis of the road safety benefits offered.

6.2 Management support

One area where the private sector can bring its expertise to the fore is by providing management expertise. There are examples of this in a broader context in Road Funds (usually targeted at highway maintenance) where board membership typically includes representatives of the private sector. The more effective Road Funds tend to operate as a business, rather than as a government body. This practice is beginning to be applied in road safety, through membership, and sometimes leadership, of Road Safety Councils, although the day to day operations of Road Safety Councils in LICs are yet to be put on a business footing.

Business sector involvement in the boards of NRSCs is found in a number of countries, for example Fiji, Ghana, Zambia and New Zealand.

GRSP is also bringing the management expertise available in the private sector into the road safety arena. In Bangalore, India, the Bangalore Agenda Task Force (BATF) is led by Infosys; the local GRSP NGO in Ghana is chaired by a representative of a private company; and 3M is active in supporting GRSP activities in South Africa.

6.2.1 Internal investment

While companies frequently invest in training for their fleet drivers, there is growing appreciation of the potential benefits from a comprehensive systems approach to risk management, which includes the areas of vehicle safety and operating practices. Investment in driver training, improving operating and management practices and vehicle safety is one way in which businesses are involved in road safety to both their own and society's advantage.

Some companies were also identified as employing other measures such as incentives, penalties, accident reviews and driver monitoring, including feedback systems, to help reduce accidents and costs. Whilst there is little evidence to suggest that these are effective ways either, a combination of measures was felt to have helped reduce accidents.

In addition, qualitative research tended to show that it is the ‘safety culture’ of a company or organisation that is important in identifying how they address safety matters.

Research has been carried out in Australia by Monash University (2000) with regards to best practice in fleet and corporate road safety. Based upon a literature review, the report identified that fleet safety initiatives, which may be effective in reducing road accidents, involved the use of safer vehicles, driver training and education programmes, as well as incentives, as opposed to rewards. In addition, safety programmes and policies within businesses with an established safety culture were found to be effective. However, very little literature existed with regards to the effects of training programmes on the safety of non-related driving by employees. The literature review in the study identified a need to tailor training programmes to specific vehicle use and type whilst management support and interest are also seen as being of paramount importance. The report notes that a change from improving driving skills to improving driver attitudes and reducing risks was being followed by some companies. Little emphasis was given to driver management was made.

Indirect road safety investment was also made through companies wishing to maximise the resale value of their vehicles, by, for example, the provision of safety features. Many companies were identified as only considering the direct costs of accidents, such as vehicle repairs, and were not overly concerned with the hidden costs, such as lost time and productivity. Legislation in Australia also requires road safety to be considered within an occupational health and safety perspective for fleet management, as vehicles are considered as workplaces.

A large number of different types of training and internal risk management systems were identified during this study. Examples of individual practices are contained in Appendix G whilst the general issues and concepts behind these various types are noted below.

6.3 Driver Training and Testing

Driver training and awareness campaigns have been carried out for fleet cars, public service vehicles (buses) and trucks. A number of training courses exist, such as the IAM and RoSPA Advanced Driving Tests in the UK. The latter includes a graded test, written report and mandatory refresher training. RoSPA also carry out the National Safe Driving Award Scheme. Similar competitions and challenges exist in a number of countries.

Very little evidence was found of companies investing in driver safety by rewarding those drivers with no insurance claims.

A review carried out by TRL (Downs, Keigan, Maycock and Grayson 1999) sought to establish accident involvement and risk associated with fleet car drivers in the UK. The report notes that, although fleet car drivers on average are somewhat younger and drive many more miles than private motorists, even taking these issues into account there is clear evidence of a fleet driver effect increasing accident liability. Various reasons were noted as possibly explaining this trend, such as time pressures, type of vehicle driven and differing responsibilities for the cost of the accident. However, these underlying reasons are poorly understood. Fleet driver training is growing in the UK, with some 60,000 drivers trained per year. In a recent survey, it was found that accident rates for trained fleet drivers was slightly lower than for untrained drivers, but the difference was not statistically significant. On this evidence, fleet driver training was not established as an effective way of reducing accident involvement, but caution must be used in applying this conclusion elsewhere. Many of the 'fleet' drivers in the UK are company car users, and not drivers of heavy goods vehicles as might be assumed for fleet drivers in LICs.

Some businesses in the UK carry out their own driver tests, for instance when a driver is hired, and provide subsequent defensive driver training to help promote road safety and reduce direct costs. Similarly, Shell in Canada carry out a driving test when hiring drivers and will pay for advanced driver training. Petroleum businesses, such as BP and Shell, have improved driver training programmes and made them more rigorous, whilst internal driving competitions have been re-focussed to encourage an emphasis on road safety.

Box 6.1 SHELL

Shell Ghana introduced a driver training programme after its contractors were involved with 19 fatalities in 1997. Originally limited to contractors, the programme has grown in terms of both services and partnership with Mobil. The Shell Facility for defensive driver training and vehicle inspection (with the country's only brake roller tester), has been renamed Petroleum Road Transport Safety Limited and has tested over 800 drivers. There are plans to extend the service to other locations in the country as well as to involve other petrol companies and transport firms . Defensive driver training has been provided to both staff and contractors working for Shell International Exploration and Production (SIEP) in Nigeria, Gabon, Thailand, Oman, Syria, Egypt and Venezuela.

6.3.1 Risk Management

Internal audits of road safety activities are carried out in some businesses, for instance BP, with guidance on best practice subsequently distributed throughout the company. Independent accident investigations are carried out along with reviews of driving behaviour and fatigue. Local reviews of risks associated with road transport are carried out and local programmes implemented to address the results. All fatal accidents involving Shell (SIEP) or their Contractors' vehicles are investigated locally and then reviewed by the head office; the CEO is also required to present the findings and learning to one of Shell Group's managing directors. Information gained from investigation of the fatal incident is disseminated to the Company and its Contractors.

There are examples of managerial training led by both the local road hauliers association as well as private companies such as car manufacturers and petroleum manufacturers. The Federal University of Rio de Janeiro set up a course on Traffic Accident Reduction in Public Transport for the benefit of managerial staff employed by bus companies. This course was recognised by Fetranspor, a bus Federation representing 200 local private operators, as a course they were willing to advise operators to attend. Shell (SIEP) recognise the need for driver management; driving hours and night driving limitations are imposed upon staff and contractors throughout the whole of SIEP.

6.3.2 Vehicle Safety

Accidents and casualties can be reduced by fitting seat belts and ensuring that they are worn. In addition, many companies running a fleet, carry out scheduled mechanical inspections of vehicles, spot checks and inspections of employees' driving licenses. Speed limiters have been installed on some vehicles. Safety claims are made for vehicles which have features that can improve a driver's ability to maintain control of the vehicle and avoid crashes, thus potentially reducing the number of crashes. The active promotion and encouragement of companies to adopt safety standards and policies regarding the purchase and hire of vehicles has occurred in both Sweden and New Zealand.

6.4 Corporate Sponsorship

There are many examples, in both LICs and HICs, of the private sector directly sponsoring road safety initiatives. Four main areas of sponsorship have been identified: road safety education and knowledge transfer; publicity and awareness campaigns; enforcement; and

driver training. Whilst these four groups are the main areas of business involvement in sponsorship, it should be noted that this is not an exclusive list. There are examples of companies sponsoring road signs, or reflective markings to enhance the visibility of vulnerable road users and heavy goods vehicles in Central and Eastern Europe. The Initiatives invested in to date, however, do not generally include hard engineering measures.

Corporate sponsorship of the four main areas of involvement is discussed below.

6.4.1 Road Safety Education/Knowledge Transfer

Petroleum companies have been identified as being a major contributor to child road safety education through a number of initiatives. These include resource material that teaches children about road safety, yet also ties in with the school curriculum and through direct investment in road safety education. For instance, BP developed a teaching resource pack in the UK, 'Living with Traffic', which was produced to help with primary school road safety education. Indeed, BP's own road safety team has been touring schools in the UK for some 30 years teaching road safety to primary school children.

Shell, for their part, have funded road safety education for primary school children in Germany and established the Deutsche Shell Youth Centre in 1950. Initially, participation involved development of fixed site traffic schools. Shell constructed the traffic schools and provided equipment including, eventually, miniature cars. In addition, mobile traffic schools were often provided in the form of equipment that could be taken to, and used in, individual schools. Deutsche Shell Youth Centre provides the equipment, and the State Government or town/rural districts fund the set up and operation costs.

In India, Bahrain Petroleum and Eicher Motors, a local vehicle manufacturer, sponsored a workshop on Safety in Transporting School Children. This was organised by the Institute of Road Traffic Engineering (IRTE) in co-ordination with the Delhi Police and the Transport Department. Eicher Motors also sponsored a workshop on safety in transporting school children in rickshaws, again organised through IRTE and the Delhi Traffic Police. This led to the production of policy document to help guide schools and Transport Departments elsewhere in the country. It should be noted that these initiatives have involved a partnership between the private sector, an NGO interested in road safety and a government organisation such as the police or local Transport Department.

Also in India, there are examples of road signs being funded by the private sector through advertising revenues linked to displays on the signs.

6.4.2 Publicity

Road safety publicity and awareness campaigns can be carried out for specific target groups using various forms of media. Examples address drink/driving, child safety, traffic speeds and seat belt wearing. Opportunities exist for the private sector to assist these publicity campaigns in a number of ways, either by helping fund the main publicity through television, radio, newspapers and magazines, and posters, or by providing the target group with opportunities and assistance to avoid the action being opposed.

In the UK, major publicity campaigns are often initiated by the government, such as the 'don't drink and drive' campaigns during the holiday periods. These campaigns have been backed up by a number of breweries and alcohol distributors. Whilst central government has been the main lead, in some areas, the provision of taxi services and late night buses have been co-financed by the major breweries. A different example was the provision of

free non-alcoholic drinks to a designated driver in some bars in the north-east of England during the Christmas period 2000, sponsored by a local brewery.

The Portman Group was established in 1989 by leading drinks manufacturers in the UK. The main aim of the organisation is to tackle social problems associated with alcohol misuse, including drink driving. The Portman Group has produced educational and publicity materials and have a code of practice on the naming, packaging and merchandising of alcoholic drinks. A recent initiative is the designated driver campaign, which is also supported by the major football and supporters organisations in England and Scotland. Elsewhere, alcohol manufacturers such as Diageo, have long established track records of supporting driver education initiatives and road safety improvements seeking to reduce the number of alcohol related driving accidents. Campaigns include the raising of awareness of drink related accidents, for instance through videos on the issue, and advertising. Whilst some of these campaigns are not directly transferable to other countries, the principle of obtaining campaign funds to highlight areas of concern from manufacturers that either directly or indirectly relate to their products, is clear.

It is important that publicity campaigns target according to areas of specific concern. For example, Shell Canada have provided training to their drivers addressing collisions with wildlife. This area of road safety was highlighted through monitoring accidents and identifying that a number of animal strikes were being recorded. To highlight the problem, Shell have worked with other petroleum companies and have helped develop workshops within the petroleum industry to identify ways and means to reduce animal strikes. One third of Canadian traffic accidents are attributed to animal strikes, and it is hoped that a reduction will lead to lower costs, improved profitability and reliability of equipment.

6.4.3 Enforcement

Direct sponsorship of the police is a relatively uncommon occurrence, due to concern that investment by private companies may be seen as bribery. Examples of businesses and the police working together are known in New Zealand, UK and Ethiopia whilst the potential for sponsorship in Bangladesh has been investigated.

The NZ Police received four compulsory breath testing buses, known as “ACC Stop Buses” under contract from ACC in 1999. Following a favourable operational review of the programme, the ACC has agreed to extend the programme into Waikato and Central Police Districts and to intensify rural operations in the Northland Police District.

Box : 6.2 Examples of UK Police Partnerships

Target 2000 Strategy-Leicestershire
After Leicestershire Constabulary developed a Target 200 casualty reduction strategy, Barclays Bank provided a bank manager for 13 months to coordinate the strategy. With the different management skills and a new perspective on the work, his responsibilities were to build partnerships with outside agencies as well as collate accident data, develop action plans, establish working parties and produce management information.

Royal Sun Alliance and Police
Royal and Sun Alliance has worked with the Association of Chief Police Officers (ACPO) in publicising the National Road Policing Strategy. This partnership began in 1997 with a national campaign to raise awareness of correctly positioning vehicle head restraints. The Central Motorway Police Group research had showed that 95% of car occupants had incorrectly positioned head restraints, setting them for “head rests” rather than safety supports. This has contributed to whiplash, which affects 7 out of 10 people injured on motorways. The campaign’s message was “to get it set right” is believed to have reached 24 million people (ACPO, 1998)

Safer Motorway Driving-Greater Manchester
The Greater Manchester motorway unit and the Rees Jeffreys Road Fund collaborated on a booklet “Helpful Hints for Safer Motorway Driving”.

Lancashire Constabulary
Lancashire Constabulary received sponsorship for in car video cameras from a film production company wanting to produce a “fly on wall” type of programme. They have also received sponsorship from banks and the Automobile Association for equipment for their schools programme. This includes a display unit, a section on motorway dangers, a question section where children identify dangers from the scenarios shown, including a child playing “chicken” on the motorway.

Bikesafe2000-North Yorkshire
A motorcycle safety campaign was undertaken by police working together with the local road safety officer as well as motorcycle interest groups, motorcycle dealers and training providers. The display caravan was sponsored by Honda Motorcycles. Police officers provide assessed rides and give certificates which are sponsored by Lloyds Bowmaker. The motorcycle association has also sponsored the booklet “Planet Bike” which dealers give with purchases of motorcycles.

Norfolk Police
When speeding threatened a small village, the Norfolk Police joined forces with the large company in reducing the speed of its employers. The company provided a Pro-Laser for the police to use at high risk locations and the police visited the company and gave talks on safe driving. In the same region, Lotus Cars are working with the police to reduce employee collisions. Weekend training includes classroom instruction as well as assessed drives.

In Delhi, Indian vehicle manufacturers Maruti Udyog Ltd have sponsored Interceptor patrol vehicles. These patrol vehicles have played a prominent role in traffic law enforcement and resulted in a considerable increase in revenue from fines - however, it is not possible for the Police to re-invest the revenue for road safety activities. This sponsorship came about following the brokering of a partnership between IRTE, an NGO, the Traffic Police, Delhi State Government and Maruti Udyog. Elsewhere in India, Infosys has donated police vehicles and breathalysers to police in Bangalore. The Police in Bangalore are also involved in a partnership with BATF (private business) and the Federation of Karnataka Lorry Owners Association, a non-government organisation.

6.4.4 Driver Training and Awareness

Driver training is typically a private sector activity, with driving schools or individual instructors operating as businesses. Additional private sector involvement with driver training is possible in a number of other ways, for instance through sponsoring driving competitions, with an emphasis on road safety. There are also examples of driver education schools set up by car manufacturers.

Since 1992 in India, IRTE has been holding road safety competitions for Delhi bus drivers (as well as school children and traffic police constables). Competitions are organised by IRTE, the Delhi Traffic Police and have also been sponsored by a local car manufacturer. Honda established the Driving Safety Promotion Headquarters in 1970 in Japan, with the main aim of “creating a better driving environment”; these driver education centres were also developed in a further six districts. The last to be established was a new Active Safety Training Park at Mote, which opened in 1997. The Training Park offers courses in techniques such as skid control, balance (for motorcyclists) and braking (Hisada, 1998).

Safer driving for truck drivers can be assisted through driver training, the use of information systems and tachographs. In Central and Eastern Europe, these have been developed and sponsored by a number of partners such as private companies (vehicle manufacturers, insurance and petroleum companies), non-governmental organisations (road hauliers' associations, Insurance Unions), the Police and research institutes. Safety programmes have included defensive driver training and highlighting awareness of driver fatigue in accidents. In addition the use and promotion of tachographs in Romania and Hungary is being put forward through a number of demonstration projects.

As well as car and truck driver training, cycle and motorcycle rider training is currently being sponsored in various locations. Shell Malaysia has been involved with the Emergency Motorcycle Unit (EMU) of the Malaysia Red Crescent Society. Volunteers in the EMU attend crashes and are able to get through traffic jams on a motorcycle where it would be impossible for a car or ambulance. In 1997, Shell assisted in training EMU volunteers in defensive riding, through its Road Safety Academy. The Road Safety Academy itself was built in 1991 to conduct safe and defensive driving courses for the company’s own staff and contractors. 3M have been involved in Romania in highlighting the presence of vulnerable road users, such as cyclists, through the provision of retro-reflective safety devices and markings.

6.5 Research and Design

The private sector has an influence over both primary and secondary road safety, for example in developing signs, markings and crash barriers. Various examples can be found of road safety benefits from design improvements, such as that of anti-skid road surface material developed by Shell UK in the early 1970s, and 3M's longstanding work on reflective materials. Innovations are usually made by established companies involved in some area of a transport related activity, and are supported through research and development budgets from within the company in response to potential increased business opportunities. Examples of both research and non-government research organisations are noted in Appendix F.

Volvo, One of the world’s leaders in automotive safety, recently opened a new state-of the art safety centre in Gothenburg. This vehicle test centre is capable of conducting computer simulations, component tests, crash simulations, and full scale tests including the testing of car impacts from side or head-on (Care on the Road, June 2000).

A number of business-sponsored research organisations exist. Well known examples are the Insurance Institute for Highway Safety (IIHS) in the USA, the AA Foundation for Road Safety Research in UK, the Central Organisation for Traffic Safety in Finland (LIIKENNETURVA), the National Society for Road Safety (NTF) in Sweden and the Canada Safety Council. These organisations are funded in various ways, for instance the IIHS through the insurance industry, the AA Foundation through sponsorship from a number of companies, including many insurance companies, the NTF through subsidies from the Swedish National Road Administration (SNRA) and LIIKENNETURVA through the levy imposed on traffic insurance premiums. All of these organisations, other than LIIKENNETURVA, are NGOs.

Research is carried out over a wide spectrum of road safety activities, including road user behaviour and factors in accidents, vehicle factors and highway design issues. LIIKENNETURVA and the Canadian Safety Council also focus on publicity and education campaigns and aim to influence the general public's traffic behaviour.

Road safety related research carried out in LICs tends to be health related, for instance some preliminary research being carried out into the medical costs of road crashes in Ghana and the extent of head injuries from two-wheeler accidents in Bangalore, India for riders with and without helmets. However, at IRTE in India, work is carried out with other Institutions and the Government to help develop enforcement techniques, enhance school transport, involve the community in roadside programmes, training and providing training to the traffic police, road safety analysis and research.

6.6 Professional Associations

Box 6.3 REAAA Road Safety Resources Guide

An initiative by the Road Engineering Association of Asia and Australasia (REAAA) initiative led to the production of "Road Safety Resources for Developing countries—A Guide to What is Available from Whom". Information was included on design and application guides and manuals, software packages, training courses. A list of contacts and an extensive bibliography was also provided. The Guide was funded and produced by the Australian Road Research Board on behalf of the REAAA.

Professional associations help promote best practice within the road safety related industries and can provide encouragement to members to recognise their road safety responsibilities. For example in the UK highway design engineers generally belong to the Institute of Civil Engineers (ICE) or the Institution of Highways and Transportation (IHT). Similarly, road safety officers either in the public or private domain, may be represented by the Institute of Road Safety Officers (IRSO), or the Association of Industrial Road Safety Officers (AIRSO). All of these societies highlight the importance of road safety and help disseminate best practice information to members. Some of these bodies actively develop design guides and advice. For instance, the IHT has produced guidelines on Safety Audits and Urban Safety Initiatives. The IHT Road Safety Audit Guidelines were produced following discussion with government officials and with independent consultants' help, using a funding contribution from 3M.

Professional associations help promote networking and familiarity with other practices and lessons learned, as well as promoting industry standards through such measures as training programmes, certification, report production and the establishment of good practice codes. Professional associations are able to achieve much due to the technical and financial support of their members, both corporate and individuals who generally receive support from their employers to participate in professional activities. On that basis,

professional associations have been included here as a way in which the business sector can promote road safety.

Trade associations with links to transport, such as the Road Haulage Association, Freight Transport Association and Confederation of British Industry in the UK, have also produced guidelines to assist road safety. A recent initiative has been the Good Lorry Code which requires signatories to obey various issues that have been identified as best practice, including driver training beyond the legal minimum, vehicle maintenance, respect of other road users and plan operations to ensure safety obligations are met. In addition, the Road Haulage Association has recently co-operated with a road user group, the Cyclists Touring Club (CTC) to produce a report on the interaction of cyclists and lorries. Road Hauliers Associations are also involved in road safety projects in Hungary and Romania, helping develop safety related information for truck drivers and training. These projects are carried out as a partnership with private sector industry, the Police and insurance companies. Similarly, the Road Operators' Safety Council (ROSCO) in the UK promotes road safety in the bus and coach industry in the UK. ROSCO administers the national industry-wide annual road safety awards and has recently provided training in awareness promotion relating to drugs and driving.

An example outside of the mainstream of transport related activities is the South African Optometrists Association which has recently undertaken a campaign entitled "Eye Sense for your License" (sic) which provided free vision screenings for the renewal of drivers' licences. In addition to reducing waiting times and increasing the frequency of eye checks, this programme also had the benefit of being able to test bi-focal wearers accurately, a task the Traffic Department could not do with the limited equipment available to them (Robot, Winter 1999).

Associations further assist road safety through their involvement and organisation of awards and competitions designed to highlight safety issues. Often, awards and subsequent ceremonies are promoted through a specific independent organisation with sponsorship of different awards or of the competition itself. The road safety awards run by ROSCO, noted above, are sponsored by industry related products. The Prince Michael Road Safety scheme is an example of an independent lead agency utilising corporate sponsorship to promote and encourage road safety activity in a number of different fields such as technical developments, road safety officers and teachers as well as advertising and media campaigns. Such awards try to recognise and reward innovation and achievement in road safety. Elsewhere such as India, IRTE holds road safety competitions for children, public service vehicle drivers and the police with sponsorship from a local vehicle manufacturer.

7 Recommendations

The following recommendations are directed at LICs where the delivery of road safety improvements is often in the introductory stage and where guidance is most needed. These recommendations are based on the experiences of both LICs and HICs. As could be expected, they build on the examples of good practice reported here, but also include other practical suggestions drawn from the collective experience of the authors.

7.1 Road Safety Organisation

Much has been made of the multi-sectoral nature of road safety, but this is true of many situations which need a similar approach. For instance, even a subject as relatively straightforward as road maintenance will involve different ministries (Transport/Communications as well as Local Government), regional representation, and partnerships between the public and private sector.

Co-ordination has come to be associated with NRSCs but a co-ordinated programme is also possible under a lead agency approach. Neither Sweden nor the UK, two countries with the best road safety records in the world, rely on a national co-ordinating body to lead road safety. Co-ordination is arguably more important at the working level, as the mid-level management working groups in many countries have shown. The recommendations below are ordered by development stage, starting from the situation where there is no organisation of road safety.

Particularly in aid projects, much attention has been given to the multi-sectoral nature of road safety, with priority given to the co-ordination of organisations. Co-ordination is needed to maximise the effectiveness of various actions but this assumes actions are already underway, which is often not the case in LICs. Responsibility for aspects of road safety not only falls to many organisations, it is also second priority (or worse) for all of the organisations involved. This has led to priority being given to establishing a mulit-sectoral body with road safety its first priority. This body (i.e., NRSC) typically has few, if any, executive powers, and was intended to serve primarily in an advisory role and as a co-ordinator of others' activities.

Based on the difficulties NRSCs have had in getting road safety programmes implemented, it is argued here that progress would be achieved more rapidly by getting the responsibility for road safety first accepted by one or more of key implementing organisations. The preferred lead organisation is the highway authority which is responsible for the development and maintenance of the road system. (eg - responsibility for road safety was legally imposed on the local and highway authorities in the UK while in Bangladesh, donor pressure has led to road safety responsibilities being adopted by the highway authorities).

REC O1 Legal responsibility for road safety needs to be defined and accepted by a lead organisation, in most cases the highway authority, and should include the responsibility for road safety co-ordination.

While many different organisations and disciplines contribute to road safety, some are more important and interdependent than others. A good working relationship between the traffic police and the roads authorities should be a priority, as both are directly involved in the operation of the road system and the control of traffic. Memoranda of understanding (MOUs) between the police and the road authorities have been developed in some countries (New Zealand, Australia) and (could) cover such issues as data exchange and joint training programmes.

REC O2 The second priority should be on developing a close working relationship between the highway authorities and traffic police.

Different organisational systems have been shown to deliver road safety (and also to fail). There is no prescriptive 'best' structure and solutions cannot be easily imported from outside, although it should be noted that HICs have tended to rely on smaller groups working at the top than have LICs. Road safety is not the only multi-sectoral problem in a country and priority should be given to identifying what mechanisms work within the country. The aim should be to build on local precedents rather than introduce foreign models where the up-take will be inevitably slower.

REC O3 Organisation of road safety should first consider local precedents. Where no local model exists, the senior co-ordinating body should be restricted to the key public sector ministries (road/transport, police, health and the ministry responsible for funding regulations (Finance)).

While the senior coordinating body should be kept small to promote accountability, the participation of other key organisations from public, business and civil society should be encouraged and coordinated through use of committees and working groups. These groups have much to offer and their support and commitment should be promoted from an early stage. Local concerns should be addressed through regional committees.

REC O4 Technical and Regional Committees should be established to allow the participation of business and civil society as well as local interests.

The success of the coordinating bodies, i.e. councils and committees will be greatly influenced by the commitment and influence of those involved. Many NRSCs have included senior members of different ministries, who are often too busy to actively participate or have insufficient familiarity with the subject. The leader, a key role, is also often determined by status rather than commitment. There are also many different issues and interests in road safety which deserve to be addressed and cannot be the responsibility of one group.

REC O5 Members should include those who are pro-active and independent but represent a key sector, and with a strong commitment to seeing road safety improved, i.e. business sector who are more aware of the economic losses involved and vulnerable road users who are more familiar with the human and social costs.

Regardless of the structure adopted, the organising body will require technical and financial resources to develop practical plans, monitor their implementation and publicise the situation, both the successes and the need for further investment. The countries where road safety policy has not developed are those where there has been minimal investment in the local organisation, i.e. Bangladesh and Zambia.

REC O6 A regular (and preferably dedicated) funding source is required for a road safety centre or support office to coordinate and promote road safety activity.

7.2 Road Safety Plans

A road safety plan should be seen as a guide to the achievement of a long term goal, or vision - typically expressed as casualty reduction targets. It should relate to the economic planning cycle of the country (eg 5 year plans) and be more detailed for the early years. While the end objective is the efficient delivery of promised actions and the achievement of targets, many of the problems identified in plans occur during their development. Accordingly, the recommendations presented here apply mainly to the planning process.

Many LIC plans have been developed with the road safety needs of the various sectors in mind and do not give due account to the local capacity available to tackle the problem. The cost of the plan, if calculated, is often determined solely by the sum of the individual actions recommended, with too little said about the expected funding sources. A more practical approach would be first to estimate the range of likely funds available, and develop a plan within that budget.

REC P1 Road safety plans should be developed with an estimated and agreed budget ceiling (or range) for the short term. Implementing organisations' proposed work programmes should be based on their agreed sectoral allocation.

While it may be hard to predict donor funding, local sources (which should be the main sources) should be easier to estimate. Sustainable sources need to be developed and the assistance of a fiscal specialist may be needed (See Funding Recommendations).

REC P2 A key priority action is to establish sustainable funding sources as road safety improvement is a long term process.

In developing plans, priority has been given to the identification of stakeholders and the involvement of the public. Unfortunately, too little difference has been made between those that will be expected to deliver the plan and the plan recipients, i.e. road users in general. The commitment of the implementing organisations is needed to increase the chances that the actions are undertaken. Plans should be agreed by the implementing organisations before they are adopted by any senior co-ordinating body.

REC P3 LIC road safety plans should be organised by implementing organisation (rather than sectors) with senior approval required for their respective plan component.

The development of a national plan should take longer than the production of a project report. Too often a plan has been produced by outsiders in a short time, without full participation of the staff who will be responsible for its implementation. The plan should be seen as a dynamic document, subject to annual review.

Road safety plans should be developed by the local organisation responsible for road safety, with assistance provided, if necessary, by foreign consultants. Whilst road safety plans from other countries are a useful reference and should be reviewed, the default plan structure should be one with which the implementing organisations are already familiar.

REC P4 Local staff should take lead role in developing road safety plan as they will be responsible for its implementation.
Small technical working groups should be established to provide business and civil society's perspective. These groups should be chaired by representatives of the lead implementing organisation.

REC P5 Technical working groups should be established to ensure the perspective of road users and vested interest groups are considered.

Not all sectors nor all actions needed will be able to be implemented, especially in the early stages of road safety activity. Road safety plans should err on the conservative side and use a shorter time frame with more frequent updates. This would require priorities to be clearly defined and local capacity considered.

While LIC road safety plans are expected to favour low cost measures in general, short term and very low cost actions should be incorporated into the plan to demonstrate local commitment during the lag that often occurs between approval and implementation. Such actions could include assigning road safety responsibilities to an existing staff member and unit (many road authorities do not even monitor road crashes on their roads) or establish liaison with another key organisation, i.e. road authorities and police.

REC P6 First road safety plans should target key needs and include a limited number of priority actions. Short term actions which can be implemented with little or no funding requirements should be included as a way of proving local commitment.

Road safety is important not because of the lost travel time or cost of property damage (both which do add up), but because of the loss of human life and serious injuries sustained. The reduction of fatal and seriously injured casualties is the traditional objective of road safety, but as with other causes of public health and social problems, a coping strategy is needed to ameliorate the consequences of those casualties not avoided. In New Zealand and Australia, trauma management is a key component of the road safety programme and receives funding from the road fund (NZ) and insurance levies (Australia). This will be even more crucial in LICs for although prevention is cheaper than cure, not all road casualties can be prevented, especially where safety skills are slowly being developed.

While priorities should be determined locally, road crashes are too often seen as the responsibility of the road, transport and police authorities and not the health authorities. (Health Ministries are too often excluded in LIC NRSCs and the recent UK government road safety strategy did not include any recommendations on trauma management or medical services for casualties.

REC P7 Post crash interventions, i.e. medical services, should be included in the national road safety plan as the consequences of crashes not prevented can be ameliorated.

Because they are easy to comprehend, casualty reduction targets can be assumed to continue to be used in LICs, action and behaviour related performance indicators share recommended as practical proxies for effectiveness. They can be easier to monitor and will be more appropriate for the many actions whose implementation is necessary for casualty reduction to occur.

REC P8 In addition to casualty reduction targets, behaviour and action related performance indicators should be used to measure progress.

National plans will inevitably be more policy focused and the development of local plans could lead to quicker action on the ground. Local plans would also be very relevant to LICs as road safety may be a national problem but it is not a nationwide concern. Road crashes will concentrate in areas of high population and vehicle density and these areas merit priority action.

REC P9 The development of road safety plans should be encouraged at the local level where the immediate need is more apparent and action on the ground more likely to be seen.

Road safety plans should be used as working guidelines and not as theoretical reports which are not applied. Plans may be given a 2-3 or 5 year time frame but work programmes and budgets should be on an annual basis and thus have less risk of being ignored. Annual work programmes should be also evaluated at the end of the year.

REC P10 Road safety plans, regardless of their time frame, should be supported by annual work programmes, quarterly monitoring and annual reviews with updates encouraged.

Foreign consultants should be used in LICs primarily to advise local staff and help co-ordinate their efforts, and not to develop and write the plan - as has been the case in some projects. Simply writing a plan over a period of a few weeks is ineffective. Technical assistance with the implementation of the plan is very important. Long-term positions are needed to help local staff become trained and experienced with their new road safety responsibilities.

This does not necessarily mean an increase in donor funding as technical assistance could be restructured to fewer but longer-term positions. However investment in local counterparts should be increased and their training, as the success of implementation will rely on their efforts.

REC P11 Technical assistance provided by donors should be for the purpose of assisting local staff with the development and implementation of plans.

Road safety plans should be seen as the starting point of implementation rather than the completion of a study phase. Donor assistance should include seed money for start-up action which would allow progress to start while governments are agreeing on how to accommodate the long term cost of the programme. Guaranteed seed money would also help promote participation in the planning stage.

REC P12 Donors are recommended to provide seed money in advance so that plans can be based on practical budgets and likely follow-up. Technical assistance (local and foreign) should be provided for the implementation stage as well as that of planning.

7.3 Funding

Direct funding of road safety activities in LICs has been shown to be limited, with scarce resources limiting potential reductions in the number of crashes and casualties. Whilst many countries have overseeing road safety co-ordinating bodies and specific road safety plans, little or no attention has been paid to identifying funding sources in order to allow the implementation of the prioritised actions.

REC F1 When developing road safety plans, as much detailed attention should be given to identifying and developing funding sources as is given to other technical aspects of the plan.

The provision of highway infrastructure, education and enforcement should be a basic government service, and hence financed through the government budget. As such, Transport, Education and Justice Departments all contribute to the road safety. Health ministry involvement tends to be post accident and thus crashes impose a cost on the health budget. It can be argued that this cost would be better spent at a preventative stage

and as such, a proportion of health budget should be directed towards road safety initiatives.

REC F2 Governments should accept their responsibility for developing a road safety strategy and provide for the funds needed for each ministry to meet its contribution to crash reduction.

Whilst governments have a responsibility for developing and implementing a co-ordinated road safety programme, many of the economic costs are borne by the private sector. Funding for road safety improvements should be shared with those who stand to gain from crash prevention measures (Wetteland and Lundebye 1997). Support and investment can be generated in various forms, through the introduction of levies on various forms of road user charges. Where the levy is collected by a private sector body, such as an insurer, this does not impact on the revenue base of government. It may be necessary. However, to make it possible for a government body (eg a NRSC) to accept funds from an outside agency. If the public sector collects the funds, then it is desirable to aim for a revenue neutral outcome, so that there is no impact on other competing demands on scarce government funds. It

New funding sources from levies or user charges will probably require legislative changes. At a base level, this may include legislation to make third party motor insurance compulsory for all drivers. Instances of levies on insurance, driving and vehicle licences, as well as on tyre manufacturers will bring about increases in revenue as motor vehicle fleets and the number of drivers grow. As demonstrated in Australia and Finland, small percentage levies on third party insurance premiums of up to 10% per year can provide a regular, annual road safety income as can fixed monetary levies on registered motor vehicles. However, such taxes should be levied on all drivers and vehicles in order to gain public acceptability.

REC F3 Road user charges should be used to provide a regular and dedicated source of funds for road safety activity.

Whilst revenues from imposing levies or a variety of charges can generate funding for Road Safety Councils and a range of activities, retention of a proportion of traffic fines by the police can finance traffic law enforcement and thereby assist road safety. Such hypothecation can help finance the funding of various traffic law enforcement measures which often are seen as low priority in LICs. As has been done in the UK, care must be taken to ensure that the revenues raised are related to the costs of the increased enforcement, so that this is not seen as another tax, but as a way of charging the offending road user for the costs he/she imposes on others. Traffic fines should thus be directly allocated to assist traffic police rather than other areas of law enforcement. Statutory changes may well be needed in order to allow such a measure to take place.

REC F4 A proportion of traffic fines revenue should be allocated to traffic law enforcement and these funds should be directly related to the costs of enforcement.

It is important that such new sources of funding are ‘earmarked’ for road safety, and that this is done in an open and visible manner. Objectives and targets for road safety need to be set in order to allow costs and benefits to be clearly identified. Furthermore, the expenditure should be carried out through an autonomous board with stakeholder representation. Clear links between revenue and spending on road safety activities should be made, with responsibilities clearly defined. In essence, road safety activities can be set on a business footing, just as large and successful charity organisations do. Monitoring and evaluation of revenue sources, revenue dispersal and its effectiveness must, therefore,

also be carried out. In effect a 'Road Safety Fund' - similar to a 'Road Fund' should be established to carry out these duties.

REC F5 Establish a Road Safety Fund, with transparent accounting procedures, to implement road safety activities which are not the direct responsibilities of Ministries and to oversee and report on the use of those road user charges dedicated to road safety.

Many countries allocate a specific budget for road maintenance activities, sometimes through a Road Fund. It is recommended that a defined proportion of this budget be specifically set aside for road safety engineering. At the very least, Road Fund budgets should be allowed to be used on road safety engineering measures.

REC F6 Establish a road safety engineering programme, funded through road maintenance budgets - particularly if a Road fund is in operation.

7.4 Business Sector Participation

Despite the substantial role of the private sector in providing services which essentially have road safety as their justification - particularly driver training and vehicle inspection - road safety is widely seen as a government responsibility. The delivery of road safety services by the private sector is less in LICs than it is in HICs, and in many LICs it is difficult for government to accept sponsorship from the private sector. Where there is explicit recognition of the role of the private sector (eg New Zealand) and a strategy is built on a partnership approach, then both partners can move forward together.

REC B1 Clearly identify the extent of private sector activity and expenditure and ensure that this is duly recognised. By involving the private sector on a partnership basis, a stronger and more powerful strategy can be developed.

It is generally accepted that the financial disciplines and management skills available within the private sector are a valuable management resource. These skills have been drawn into a number of Road Safety Councils and the GRSP is trying to develop partnerships which make best use of them. Successful examples can be found in Bangalore and Ghana.

REC B2 Recognise the management skills of the private sector and build partnerships to make best use of these skills.

Box 7.1 BANGALORE
3M, Volvo, Getit Yellow Pages, Coca Cola, Infosys, Koshy Holdings PVT Ltd, Tata, Synergy: all working together with Government and NGOs as part of Road Safety Drive 2000 led by Bangalore Agenda Task Force (BATF). Bangalore has involved business partners in road safety for some time, particularly with the cost of introducing road signs. The involvement of business partners has become so acceptable that the BMP has recently issued a new sign manual that includes specification of sponsorship plates on road signs. Prior to the establishment of BATF sponsorship of road safety schemes included road signs, publicity campaigns and road improvement schemes. BATF has brought in a potentially much larger group of business partners particularly from the motor industry and insurance and also a number of NGOs.

Some operators of fleets of large vehicles, often carrying valuable loads, and have developed risk management strategies, incorporating road safety issues, which are much

more rigorous than the approach used by trainers and examiners of ordinary drivers. Oil companies are generally to the fore in this respect. Other fleet operators and employers of large numbers of drivers would benefit from a similar approach. In some cases the individual business has extended internal practices to cover those working under contract to it, and even to offer a service to outsiders (eg Shell and Mobil in Ghana).

REC B3 Build on the risk management approach used by the best fleet operators and encourage them to provide driver training services to others.

Where occupational health and safety legislation exists and has been interpreted as covering vehicles used for business, a powerful influence can be exerted over vehicle operators to exercise a duty of care for their employees and other road users who may be affected by their operations. This can be used to influence the way in which companies develop and apply road safety policies, as has been done in New Zealand where the LTSA has produced guidelines for fleet managers. The best operators respond by improving their vehicle safety, driver recruitment policies and driver training.

REC B4 Make use of Health and Safety legislation to ensure that fleet operators act responsibly to their employees and other road users.

Private businesses have been sponsoring a wide range of road safety activities in HICs for many years. The practice is growing in LICs, particularly where the business can also see a potential return. The benefits to business are not only in good PR: for example in India road signs carrying advertising can be self-financing and 3M sponsor reflective markings in countries to demonstrate the effectiveness of their materials. By building a long term potential benefit for the sponsor into the activity, a sustainable programme can be achieved.

REC B5 Carefully match potential sponsors to the programme, to offer a long term benefit in order to achieve sustainability.

Reward innovative and outstanding involvement in road safety both through local and national awards to help provide recognition to the work being carried out. Utilisation of an independent, interested association or organisation to act as the lead agency with responsibility to attract and obtain sponsorship.

REC B6 Involve private sector activity in the sponsorship of awards and competitions clearly designed to promote and enhance road safety.

This review has attempted to document examples of how the business sector has and can promote road safety. As part of GRSP's objective to serve as a knowledge clearinghouse, this information should be collected on a regular basis.

REC B7 GRSP partners, both business and donor agencies, should be requested to submit a road safety portfolio which documents previous road safety efforts and provide annual updates on road safety activities.

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Glossary

AARTO	Administrative Adjudication of Road Traffic Offences (South Africa)
ACPO	Association of Chief Police Officers (UK)
ADB	Asian Development Bank
ADI	Approved Driving Instructor (UK)
AIRSO	Association of Road Safety Officers (UK)
AIU	Accident Investigation Unit (UK)
BATF	Bangalore Agenda Task Force
BRTA	Bangladesh Road Transport Authority
COLTO	Committee of Land Transport Officials (South Africa)
CONASET	Commision National de Seguridad de Transito (Chile)
CTC	Cyclist Touring Club (UK)
DDC	Defensive Driving Course
DETR	Department of Environment, Transport and the Regions (UK)
DFID	Department for International Development (UK)
DGLC	Directorate General of Land Communications (Indonesia)
DOT	Department of Transport (UK)
DUTP	Dhaka Urban Transport Project (Bangladesh)
DVLA	Division of Vehicle Licensing Agency (UK)
EMU	Emergency Medical Unit (Malaysia)
ESCAP	Economic and Social Commission of Asia and the Pacific (UN)
ETSC	European Traffic Safety Council
GRSP	Global Road Safety Partnership
HIC	High income country
ICE	Institute of Civil Engineers (UK)
ICG	Industry Consultative Group (NZ)
IHT	Institute of Highways and Transportation (UK)
IIHS	Insurance Institute of Highway Safety (USA)
IRSO	Institute of Road Safety Officers (UK)
IRTE	Institute of Road Traffic Education (India)
LAA	Local Authority Association (UK)
LIC	Low income country
LIIKENNETURVA	Central Organisation for Traffic Safety (Finland)
LTP	Local Transport Plan
LTSA	Land Transport Safety Authority (NZ)
MEDOC	Ministry of Economic Development Organisation and Cooperation
MIB	Motor Insurance Bureau (UK)
MOU	Memorandum of Understanding
NGO	Non Governmental Organisation
NRA	National Roads Administration (South Africa)
NRSAG	National Road Safety Advisory Group (NZ)
NRSC	National Road Safety Council
NRSWG	National Road Safety Working Group (NZ)
NTF	National Society for Road Safety (Sweden)
NZ	New Zealand
NZRSP	New Zealand Road Safety Programme
PACTS	Parliamentary Advisory Council on Transport Safety (UK)

PSHE	Personal, Social and Health Education (UK)
RAF	Road Accident Foundation (South Africa)
REAAA	Road Engineering Association of Asia and Australasia
RHD	Roads and Highways Department (Bangladesh)
ROADSIP	Road Sector Development Improvement Programme (Zambia)
ROSCO	Road Operators Safety Council (UK)
ROSPA	Royal Society for the Prevention of Accidents (UK)
RSED	Road Safety Environment Directorate (UK)
RTA	Road Transport Authority (Bangladesh)
RTMS	Road Traffic Management System (South Africa)
SIEP	Shell International Exploration and Production
SNRA	Swedish National Road Administration
TOPICS	Transport Operations Programmes
TPP	Transport Plan Proposal
TRL	Transport Research Laboratory (UK)
UK	United Kingdom
VRU	Vulnerable Road User