

Road Safety Management Capacity Reviews and Safe System Projects

Guidelines

Updated Edition

Road Safety Management Capacity Reviews and Safe System Projects Guidelines

UPDATED EDITION

Tony Bliss • Jeanne Breen

May 2013
Global Road Safety Facility



© 2013 Global Road Safety Facility
1818 H Street NW
Washington DC 20433
All rights reserved

This volume is a product of the Global Road Safety Facility. The findings, interpretations and conclusions expressed in this volume do not necessarily reflect the views of the Executive Directors of The World Bank or the governments they represent.

The Global Road Safety Facility does not guarantee the accuracy of the data included in this work.

Rights and Permissions

The material in this publication is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The Global Road Safety Facility encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly.

Table of Contents

SECTION I INTRODUCTION TO THE UPDATED EDITION		7
1	Introduction	9
2	Summary of Core Guidelines	11
2.1	Key concepts underpinning the guidelines	12
2.2	Two-stage process.	13
2.3	Conduct of capacity review	13
2.4	<i>Safe System</i> projects	14
3	Lessons Learned	15
3.1	Weak management capacity	15
3.2	Country readiness for action.	15
3.3	Commitment to addressing review findings	16
3.4	Distinction between investment strategy and implementation projects	16
3.5	Sustaining review momentum	16
3.6	Use of review checklists.	16
3.7	Review team independence and expertise	17
3.8	Argentina Road Safety Project.	17
4	Streamlined Approach	19
4.1	Review context.	19
4.2	Key steps	20
4.3	Project preparation and implementation.	20
5	Looking Ahead to a Decade of Action	21
SECTION II CORE GUIDELINES		23
1	Introduction	25
1.1	Projected losses	25
1.2	Blueprint for action	26
1.3	Institutional capacity weaknesses.	26
1.4	Purpose of guidelines.	28

2	World Report Recommendations	29
2.1	Recommendations	29
	Recommendation 1	
	Identify a lead agency in government to guide the national road safety effort	29
	Recommendation 2	
	Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in each country.	29
	Recommendation 3	
	Prepare a national road safety strategy and plan of action.	30
	Recommendation 4	
	Allocate financial and human resources to address the problem.	30
	Recommendation 5	
	Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions. ..	30
	Recommendation 6	
	Support the development of national capacity and international cooperation.	31
2.2	Implementing the recommendations.	31
3	Managing for Results	33
3.1	Road safety management system	33
3.1.1	Institutional management functions.	35
	(i) Results focus.	35
	(ii) Coordination.	36
	(iii) Legislation	36
	(iv) Funding and resource allocation	36
	(v) Promotion	36
	(vi) Monitoring and evaluation	37
	(vii) Research and development and knowledge transfer	37
3.1.2	Interventions	37

3.1.3	Results	38
3.1.4	Evolution of results focus	39
	(i) Results Focus – Phase 1: Focus on driver interventions	39
	(ii) Results Focus - Phase 2: Focus on system-wide interventions. ...	39
	(iii) Results Focus - Phase 3: Focus on system-wide interventions, targeted results and institutional leadership.	39
	(iv) Results Focus - Phase 4: Focus on <i>Safe System</i> long-term elimination of deaths and serious injuries and shared responsibility.	40
3.1.5	Conducting capacity reviews	41
3.2	Role of the lead agency	41
3.3	Country investment model	42
	3.3.1 Building management capacity	42
	3.3.2 Learning by doing	43
3.4	Building global, regional and country capacity	45
3.5	An integrated implementation framework	46
4	Country Implementation Guidelines	49
4.1	Implementation stages.	49
4.2	Stage 1: Conduct country capacity review	51
	4.2.2 Prepare for review.	52
	(i) High-level management commitment	52
	(ii) Composition of review team	52
	(iii) Pre-review inception report	52
	(iv) Consultation schedule	52
	4.2.3 Appraise results focus at system level	53
	4.2.4 Appraise results focus at interventions level	55
	4.2.5 Appraise results focus at institutional management functions level ..	59
	4.2.6 Assess lead agency role and identify capacity strengthening priorities	63
	(i) Weak lead agency capacity	65
	(ii) Basic lead agency capacity	65
	(iii) Advanced lead agency capacity.	65
	(iv) Identify lead agency strengthening priorities	65

4.2.7	Specify investment strategy and identify <i>Safe System</i> implementation projects	66
	(i) Identify funding sources	66
	(ii) Determine sequencing of investments	67
	(iii) Identify <i>Safe System</i> projects to implement investment strategy	68
4.2.8	Confirm review findings at high-level workshop	69
	(i) Participants	69
	(ii) Procedures	69
	(iii) Reach official consensus on review findings	69
4.2.9	Finalize review report.	70
4.3	Stage 2: Prepare and implement <i>Safe System</i> projects	70
4.3.1	Set project objectives	71
	(i) Core objectives	71
	(ii) Related objectives	71
4.3.2	Determine scale of project investment	72
	(i) Stand-alone versus component.	72
	(ii) Set project budgets	72
4.3.3	Identify project partnerships	72
	(i) Global and regional partners	72
	(ii) Local research centers	73
	(iii) Community groups and NGOs	73
	(iv) Private sector	73
4.3.4	Specify project components	73
	(i) Capacity strengthening priorities	73
	(ii) High-risk corridors and areas to be targeted	74
	(iii) Policy reforms	77
4.3.5	Confirm project management arrangements	78
	(i) Lead agency role	78
	(ii) Coordination	78

4.3.6	Specify monitoring and evaluation procedures	79
	(i) Procedures	79
	(ii) Reporting	79
4.3.7	Prepare detailed project design	80
4.3.8	Address project implementation priorities	80
	(i) Role of technical assistance	80
	(ii) Promotion	80
	(iii) Knowledge transfer and roll-out program	81
4.4	Conclusions	81
SECTION III ANNEXES		85
ANNEX 1	Technical assistance for the preparation and implementation of <i>Safe System</i> projects	87
	Demonstration projects in targeted high-risk corridors and areas	89
	Project policy reviews	109
	Project management	119
	Project monitoring and evaluation	123
 List of Figures, Checklists, Tables and Boxes		
Figure 1:	Road safety management system	34
Figure 2:	Phases of investment strategy	43
Figure 3:	Targeting the network	44
Figure 4:	Building global, regional, and country road safety management	45
Figure 5:	Phases of investment strategy	50
Figure 6:	Appraise results focus at system level	53
Figure 7:	Appraise results focus at intervention level	55
Figure 8:	Appraise results focus at institutional management functions level	59
Checklist 1:	Results focus at system level	54
Checklist 2:	Planning, design, operation and use of the road network	56
Checklist 3:	Entry and exit of vehicles to and from the road network	57
Checklist 4:	Entry and exit of road users to and from the road network	58

Checklist 5: Recovery and rehabilitation of crash victims from the road network	58
Checklist 6: Coordination	60
Checklist 7: Legislation	60
Checklist 8: Funding and resource allocation	60
Checklist 9: Promotion	61
Checklist 10: Monitoring and evaluation	61
Checklist 11: Research and development and knowledge transfer	62
Checklist 12: Lead agency role and institutional management functions	64
Table 1: Predicted road traffic fatalities:	25
Table 2: Lead agency strengthening priorities	65
Table 3: Sequencing of investments.	68
Table 4 Road safety performance measures	77
Box 1: Road safety management capacity weaknesses:	27
Box 2: Institutional complexity and scale of investment:	32
Box 3: Classification of interventions	38
Box 4: Safety targets	38
Box 5: Investment and institutional capacity	46
Box 6: Shifting to <i>Safe System</i> road safety projects	70
Box 7: The International Road Assessment Programme (iRAP).	75
Box 8: General deterrence-based traffic safety enforcement	75
Box 9: Improved emergency medical and rehabilitation services.	76
Box 10: Coordination structures and working procedures	78

SECTION

I

INTRODUCTION TO THE UPDATED EDITION

1

Introduction

This updated edition has been prepared to complement the previous guidelines issued by the World Bank that were designed to support the successful implementation of the recommendations of the *World Report on Road Traffic Injury Prevention*.¹ The first guidelines were issued in 2004, soon after the launch of the *World Report*, in the form a brief *Transport Note*.² Based on the lessons learned with their application they were subsequently revised and expanded and published as a major document in 2009 (hereafter referred to as the ‘core guidelines’).³ The updated edition reissues the core guidelines (without amendment, but minus their detailed annexes) and summarizes the lessons learned in their application so far. It also provides a streamlined approach to support country investment operations where there is already a country commitment to strengthen road safety management capacity and significantly invest in a related road safety project designed to address capacity strengthening priorities.

Over the coming *Decade of Action for Road Safety 2011 - 2020* country road safety performance objectives will be aligned with the five pillars of the *Global Action Plan* that has been prepared to address key priorities (road safety management capacity, infrastructure safety, vehicle safety, road user behavior and post-crash care).⁴ As promoted in the core guidelines, the World Bank focus over the Decade will be on mainstreaming road safety projects that address these five pillars as an integral part of road infrastructure and urban transport investments, to help accelerate knowledge transfer and scale up country investment to improve road safety results.

Furthermore, under the Multilateral Development Bank Road Safety Initiative, the World Bank is partnering with the African Development Bank, Asian Development Bank, CAF – Development Bank of Latin America, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank and the Islamic Development Bank to leverage investment over the Decade in *Safe System* road safety projects, and the updated edition is designed to support this initiative.⁵

References

¹ Eds. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C (2004). *World Report on Road Traffic Injury Prevention*, World Health Organization, Geneva.

² Bliss T (2004). *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention*, Transport Note TN-1, The World Bank, Washington, DC.

³ Bliss T & Breen J (2009). *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention. Country guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects*, World Bank Global Road Safety Facility, Washington DC.

⁴ United Nations Road Safety Collaboration (2011). *Global Plan for the Decade of Action 2011 – 2020*, World Health Organization, Geneva.

⁵ Global Road Safety Facility (2011). *MDB Road Safety Initiative: A Development Priority*, World Bank, Washington DC.

2

Summary of Core Guidelines

The core guidelines are presented in Section 2. Where appropriate, this updated edition will make reference to relevant sections of the core guidelines.

The core guidelines present a pragmatic approach to overcoming the institutional capacity barriers impeding the implementation of the *World Report* recommendations (see Box 1). They treat the recommendations as a totality within an integrated framework to ensure that institutional strengthening initiatives are properly sequenced and adjusted to the absorptive and learning capacity of the country concerned.

Box 1: Recommendations of the *World Report on Road Traffic Injury Prevention*

1. Identify a lead agency in government to guide the national road safety effort.
2. Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in each country.
3. Prepare a national road safety strategy and plan of action.
4. Allocate financial and human resources to address the problem.
5. Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions.
6. Support the development of national capacity and international cooperation.

Refer section 2; Section 2

2.1 Key concepts underpinning the guidelines

The core guidelines emphasize managing for results and the associated strengthening of country road safety management systems, with special attention being paid to the role of the lead road safety agency in ensuring institutional effectiveness and efficiency in program delivery (*refer sections 3.1 – 3.5; Section 2*).

Key concepts underpinning the core guidelines are summarized in Box 2. They highlight the importance of addressing all elements of the road safety management system, taking a staged approach to country road safety investment, and targeting the highest concentrations of deaths and injuries across the road network. Improving road safety on a sustainable basis in low and middle-income countries requires proper account to be taken of current road safety management capacity weaknesses that present a formidable barrier to progress and the core guidelines have been designed to address this. In their promotion of the *Safe System* approach they also address the challenge of how to benefit from what has been learned at great cost in high-income countries over the last 50 years, to avoid their high death and injury rates resulting from road crashes that for far too long were accepted as an inevitable price of economic growth and rapid motorization.

Box 2: Key concepts underpinning the guidelines

Addressing all elements of the road safety management system

Road safety is produced, just like other goods and services. This production process can be viewed as a management system with three distinctive elements to be considered: (1) *institutional management functions*, which produce (2) *interventions*, which in turn produce (3) *results*. Discussions concerning road safety improvements often concern (2) alone. However, assessing all elements of the road safety management system and the linkages between them is critical for any country seeking to successfully implement the *World Report* recommendations and improve its current performance levels.

Taking a staged approach to road safety investment

A long-term investment strategy is required to continuously improve national road safety performance. It must be designed to overcome revealed country capacity weaknesses by first building a core capacity to bring targeted safety outcomes under control, then scaling up investment to accelerate this capacity strengthening and improved performance across the national road network, and finally consolidating it on a sustainable basis.

This staged approach to investment acknowledges the barriers imposed by weak safety management capacity and addresses the challenge of accelerating the necessary process of institutional strengthening required to effectively govern the production of improved road safety results. It recognizes the longer-term implications of immediate actions and plans the necessary scaling up of investment required to achieve a sustainable path where safety outcomes are brought under control.

In effect the long-term investment strategy is implemented by a program of successive projects that build on the results achieved and the management capacity created in the process. Successful implementation of the investment strategy hinges on designing projects that accelerate the transfer of road safety knowledge to participants, strengthen the capacity of participating partners and stakeholders, and rapidly produce results that provide benchmark measures to dimension a roll-out program. The focus of these guidelines is on the identification and preparation of projects that implement the establishment phase of the investment strategy and build the institutional capacity and evidence base to roll out a larger program of initiatives in the investment strategy's growth phase.

Targeting the highest concentrations of deaths and injuries across the road network

To produce rapid results projects must target the highest concentrations of death and injuries across the road network to maximize program and project benefit-cost ratios and the likelihood of achieving them. The bulk of deaths and injuries are usually incurred on a small proportion of a country's road network, which simply reflects the concentration of traffic on key network corridors and areas where high speeds are experienced. In the absence of reliable fatality and injury data it is still possible to identify the most dangerous corridors by identifying high traffic volume, high speed corridors, where higher densities of fatal and serious injury crashes can be anticipated. International Road Assessment Programme (iRAP) tools can also be used to comprehensively rate road network safety and identify high-risk corridors and related investment priorities.

Refer sections 3.1 – 3.3; Section 1

2.2 Two-stage process

The core guidelines present a two-stage, iterative process that culminates in the preparation and implementation of projects designed to launch the identified long-term country investment strategy.

The first stage of the process concerns the conduct of a country capacity review (*World Report* recommendation 2). The capacity review assesses the lead agency role (*World Report* recommendation 1) and specifies a long-term investment strategy and identifies *Safe System* projects to launch it (*World Report* recommendations 3 & 4). The second stage of the process concerns the detailed preparation and implementation of the *Safe System* projects (*World Report* recommendations 5 & 6).

2.3 Conduct of capacity review

Key steps in the capacity review process are summarized in Box 3. The core guidelines provide detailed procedures for these steps and related checklists.

Box 3: Capacity review steps

A country capacity review is conducted through nine distinctive steps:

1. Set review objectives
2. Prepare for review
3. Appraise results focus at system level
4. Appraise results focus at interventions level
5. Appraise results focus at institutional management functions level
6. Assess lead agency role and identify capacity strengthening priorities
7. Specify investment strategy and identify *Safe System* implementation projects
8. Confirm review findings at high-level workshop
9. Finalize review report

Refer sections 4.2.2 – 4.2.9; Section 2

The generic objectives of a country capacity review are to:

- set out an integrated multisectoral framework for dialogue with country partners and stakeholders on potential road safety investments;
- assess government ownership of safety results and identify related institutional responsibilities and accountabilities;
- reach official consensus on road safety management capacity weaknesses and institutional strengthening and investment priorities to overcome them; and
- identify *Safe System* implementation projects to launch the investment strategy.

The review should receive appropriate Ministerial and agency heads' endorsement and their agreement to fully engage in the process and provide the necessary support required to ensure its success. Experienced, internationally recognized road safety specialists with senior management experience at country and international levels should conduct the review. Expertise in particular aspects of the road safety management system will be important, but the most critical requirement is high-level experience with the overall strategic management and direction of national road safety programs.

2.4 *Safe System* projects

The focus of the core guidelines is on the identification and preparation of *Safe System* projects that implement the establishment phase of a country's long-term investment strategy and build the institutional capacity and evidence base to roll out a large program of initiatives in the investment strategy's growth phase. Generic *Safe System* project components are summarized in Box 4. Details of the components will be determined by the capacity review findings.

Box 4: *Safe System* project components

1. Capacity strengthening priorities:

- Lead agency
- Crash database development
- Other institutional reforms

2. High-risk corridors and areas to be targeted with good practice interventions:

- Infrastructure safety improvements
- General deterrence-based traffic safety enforcement programs, supported by intensive publicity & awareness campaigns (e.g. speed, alcohol, safety belts & helmets, fatigue, commercial vehicles)
- Improved post-crash response and emergency medical and rehabilitation services

3. Policy reforms (e.g. driver licensing, vehicle safety standards)

4. Project management arrangements:

- Lead agency role
- Coordination

5. Monitoring and evaluation system:

- Performance targets for high-risk corridors and areas
- Procedures
- Reporting arrangements

Refer sections 4.3.4 – 4.3.6; Section 2

Generic terms of reference for the procurement of technical assistance to support the preparation and implementation of project components are provided in Section 3. Supporting resources for crash database development, infrastructure safety improvements and general deterrence-based traffic safety enforcement programs can be provided by the International Road Traffic Accident Database Group (IRTAD), the International Road Assessment Programme (iRAP), and the International Road Policing Organization (RoadPOL) respectively.

3

Lessons Learned

The core guidelines have been used to conduct capacity reviews and prepare follow-up road safety projects in a variety of low and middle-income countries and investment settings, and also in several high-income countries. Their application has been comprehensively evaluated and overall they have been assessed as providing good practice tools for use in any country context.¹ In addition, the road safety management framework presented in the core guidelines has been endorsed and utilized by the DaCoTA EU Road Safety Project and the ISO 39001 Road Traffic Safety Management Systems international standard.^{2,3} In terms of their application, some key lessons have been learned concerning country contexts and associated procedural and technical issues:

3.1 Weak management capacity

Road safety management capacity is generally weak in low and middle-income countries and the paradox of seeking to initiate what are essentially complex changes in such contexts must be addressed constructively, rather than sidestepping difficult issues and reverting to measures that are easy to introduce but lack any enduring effectiveness.

Country capacity weaknesses should not be seen as invalidating the application of the core guidelines, on the grounds that they are too complex for use in a weak capacity environment. On the contrary, the core guidelines have been designed to systematically identify capacity strengthening priorities and sustainable measures to address them.

3.2 Country readiness for action

Fundamental capacity review objectives concern the assessment of governmental ownership of road safety as a priority issue and seek to reach an official consensus on how to address this priority. Government and agency readiness for action cannot be taken for granted and must be stress-tested.

The systematic identification of road safety management capacity weaknesses must be sensitively handled, as related tensions with government and agency representatives may surface. Again this should not be seen as invalidating the application of the core guidelines, as they have been designed to directly address governance issues that are central to improving road safety performance at the country level.

3.3 Commitment to addressing review findings

The phasing of the review process is crucial and high-level agreement must be reached on its objectives, timeframe and core deliverables prior to engaging in the detailed assessment of country conditions.

Country commitment to acting on the findings and recommendations of the capacity review is vital and this highlights the importance of reaching at the outset a shared understanding of how the core guidelines will be applied and their overall purpose.

3.4 Distinction between investment strategy and implementation projects

Long-term investment strategies should not be confused with the projects designed to implement them, and projects designed to implement the establishment phase of the investment strategy should be not be overloaded with components that are sequentially more appropriate to the growth and consolidation phases.

This has proved to be one of the biggest challenges faced when using the core guidelines. Long-term investment strategies must be carefully specified in accordance with the framework provided, with particular reference to the establishment, growth and consolidation phases of investment over a recommended 15-year period. Short-term projects identified and prepared to launch the investment strategy must be shaped around the generic components identified in the core guidelines, recognizing that they will of necessity be building the capacity to sustain them during the implementation process. Hence they must be carefully specified and kept as uncluttered as possible to ensure a simultaneous focus on results and institutional capacity strengthening.

3.5 Sustaining review momentum

Implementation projects are designed to capitalize on the capacity review findings and provide the follow-up impetus needed to ensure sustainable country capacity strengthening continues long after the review itself is completed. That is, the investment project is the substantive follow-up and without it the review process can be left stranded.

The core guidelines have been designed for use in situations where there is a country commitment to invest in road safety, mostly in the context of multilateral development bank investment operations which can assure the levels of financing commensurate with success. While there can be delays between the completion of a capacity review and approval of investment financing for the identified road safety project, it is important to keep these delays to a minimum and ensure continuity in the overall process. Ideally the detailed project preparation phase should be well aligned with the investment approval process, possibly supported by grant funding or retroactive financing sources.

3.6 Use of review checklists

The capacity review checklists are designed for use by experienced reviewers and must be tailored to the country circumstances. In no circumstances should they be used as a questionnaire to be presented to country respondents.

Mature road safety management systems in good practice countries are complex and the core guidelines capture their essential dimensions in a set of checklists that can guide the capacity review process. It is recognized that many low and middle-income countries demonstrate capacity weaknesses across these dimensions and that many elements of a good practice system are not yet in place. This does not invalidate the application of the checklists by experienced reviewers, as it is important to reach a shared understanding with participants of what is working well in the country concerned and what is missing in terms of system elements that are necessary for sustained success. However, it should not be expected that country participants systematically comprehend all the details and underlying content of the checklists, especially in situations where many elements of their road safety management system are ill-developed or missing. This is ultimately the task of the reviewers who must synthesize and communicate their findings to reach a consensus view of the road safety management capacity in the country concerned.

3.7 Review team independence and expertise

Country office staff and experienced in-country advisors provide invaluable support to the review process and play an essential role in the review process. However, the professional independence and recognized expertise of the capacity review team remain crucial to the successful achievement of the review's objectives.

The core guidelines have been designed for use by experienced road safety managers who have demonstrated success at the executive management level in the design and implementation of national and regional road safety programs. Reviewers with these skills are in short supply, but they are crucial in ensuring the credibility and effectiveness of the capacity review process and its outcomes.

3.8 Argentina Road Safety Project

Implementation projects as specified in the core guidelines aim to strengthen the lead agency contribution to directing and sustaining the production of improved road safety results and maximize the potential for the lead agency to rapidly assert itself in this role and simultaneously build its capacity and credibility.

The World Bank Argentina Road Safety Project demonstrated an innovative application of this approach. Its primary emphasis was on reinforcing the role of a newly created lead agency in Argentina that enabled it to effectively and efficiently deliver its institutional management functions and build and strengthen its leadership and partnership capacity in the process. The project was prepared in collaboration with the transport and health sectors using a two-stage, output-based investment process to finance institutional capacity strengthening priorities such as improved data management and monitoring and evaluation systems, targeted interventions in high-risk corridors, and national policy reforms. The project included an incentive fund designed to attract participation by community-based organizations and municipalities. It also benefited from international peer-to-peer partnerships facilitated by the World Bank Global Road Safety Facility which engaged the International Road Assessment Programme (iRAP) for project corridor safety surveys and the specification of infrastructure safety improvements, the International Road Traffic Accident Database (IRTAD) Group and the transport and health Ministries from Spain for support with road safety database establishment and management, and the International Road Policing Organization (RoadPOL) for advice on the management and delivery of effective general deterrence road policing in the project corridors. Important lessons learned from the implementation of this project are summarized in Box 4.

Box 5: Argentina project lessons

- 1. Adapting the World Bank guidelines to unique country circumstances is important.** The establishment of a Federal lead agency in Argentina created opportunities to directly tailor an investment strategy and implementation project to support its establishment needs.
- 2. The correct sequencing of key initiatives is crucial.** The timely creation of Argentina's lead agency meant its national strategy could be owned, directed, and firmly grounded in a well-resourced set of partnerships and shared performance management framework.
- 3. Complexity can be managed.** The existence of a professionally staffed lead agency in Argentina enabled the development and implementation of complex road safety interventions, and their effective communication to all participants and stakeholders across government and its agencies, communities and the business sector.
- 4. Securing a stable funding base for the lead agency is vital.** The lead agency in Argentina was granted financial autonomy by law and received 1% of all collected vehicle insurance fees as core funding. This allowed it to rapidly build a professional staff and well-branded institutional presence, provide support to partners and stakeholders, and underwrite a core platform of activities that could be scaled up to continue to improve road safety performance in accordance with longer-term strategic goals.
- 5. Empowering the lead agency to specify the nature and targeting of road safety enforcement programs improves their effectiveness, efficiency and community acceptability.** The lead agency in Argentina played a central role in mobilizing the traffic safety police and their delivery of general deterrence styled operations that improve road safety performance.
- 6. Well-focused national leadership and supporting resources can catalyze effective partnership engagement with provincial and local governments, NGOs and the private sector.** The project's creation of an 'Incentive Fund' in Argentina allowed the lead agency to fund initiatives and legitimate its role with lower tiers of government and the community at the more grass roots level.
- 7. Project implementation can move fast when institutional roles, processes and resources are properly addressed, well managed and the responsibility of an empowered lead agency.** The powerful lead agency presence in Argentina underscored the simple fact that where there is such agency ownership there is purposeful and speedy action.
- 8. South-South dialogue and action on a regional basis can be stimulated when best practice measures are taken at a country level and given high visibility.** The Argentina project has created interest in other Latin American countries facing the challenges of creating a lead agency to manage their national road safety effort. The project's development of a National Road Safety Observatory in partnership with the IRTAD Group and its Spanish government counterparts also spurred action to create a Regional Road Safety Observatory and provided the model and protocols for this.
- 9. Monitoring and evaluation of road safety performance underpin the delivery of sustainable road safety improvements.** Credible, accessible performance data and related crash analyses are crucial to carrying out this role and the lead agency in Argentina has already demonstrated the power of its strong partnerships with police agencies, the health sector and the IRTAD Group to ensure that this capacity is built.
- 10. Political will to take control of national road safety performance matters a lot, but it must be given tangible form through empowered and adequately funded institutional arrangements to achieve this.** In the case of Argentina there was evidence of political concern about the social and economic costs of road deaths and injuries, but little effective action was implemented until the government took the decision to create and resource a lead agency that could be held accountable for road safety results.

Source: Raffo V & Bliss T (2012). *Case Study: The Argentina Road Safety Project: Lessons for the Decade of Action for Road Safety 2011 – 2020*, The World Bank, Washington DC.

References

- ¹ OECD, International Transport Forum (2008). *Towards Zero. Ambitious Road Safety Targets and the Safe System Approach*, Annexes C & D, Joint Transport Research Centre, OECD/ITF, Paris.
- ² DaCoTA (2012). *Road Safety Management*, Deliverable 4.8p of the EC FP7 project DaCoTA, European Commission Directorate General for Mobility and Transport, Brussels.
- ³ ISO (2012). *International Standard ISO 39001, Road traffic safety (RTS) management systems – Requirements with guidance for use*, International Organization for Standardization, Switzerland.

4

Streamlined Approach

A systematic and rigorous approach must be taken to fully apply the core guidelines and yet there will be situations arising where for reasons of timing or decisions already taken a more directed and less resource intensive approach is both necessary and justifiable. It is important to recognize that the core guidelines have sufficient flexibility to be adapted to unique country circumstances.

For example, a streamlined approach has been successfully developed and applied to support country investment operations where there is already a recognized need to strengthen road safety management capacity and a commitment to significantly invest in a related road safety project. The context for this approach and its key steps are summarized below.

4.1 Review context

The streamlined approach starts with the identification of high-risk roads and areas in the network and then works back through the good practice interventions and policies that could address related safety priorities and identifies the agencies responsible and assesses their delivery capacity.

The advantage of this approach is that all agencies that share responsibility for managing the safety of the identified corridors and areas can be quickly engaged and the measures needed to strengthen their contribution to an improved results focus assessed.

Some agencies will be able to act directly to improve safety performance in the corridors and areas identified (e.g. infrastructure, enforcement and emergency medical services) and others will do so indirectly (e.g. vehicle and driver licensing standards and heavy vehicle regulation).

4.2 Key steps

There are five key steps in the streamlined approach.

Step 1: Identify safety priorities by road type (risks, road users) and select sample of high-risk demonstration corridors and areas (*refer checklists 1, 2 & 10; Section 2*).

Step 2: Specify good practice interventions and policy reforms designed to address identified safety priorities (*refer checklists 2 – 5; Section 2*).

Step 3: Identify agency roles and responsibilities for specified good practice interventions and policy reforms.

Step 4: Identify agency road safety management capacity strengthening requirements (*refer checklists 6 – 12; Section 2*).

Step 5: Prepare project concept note that identifies good practice interventions in high-risk corridors and areas and related policy reforms and agency capacity strengthening requirements (*refer sections 4.2.7(iii) – 4.2.9; Section 2*).

Note that while the streamlined approach is designed to move quickly towards the identification of investment projects, the projects should still be formulated within an agreed framework for a long-term investment strategy as specified in the core guidelines (*refer sections 4.2.7 (i) – (ii); Section 2*).

4.3 Project preparation and implementation

Undertake the detailed preparation and implementation of the project in accordance with core guidelines (*refer section 4.3; Section 2*).

5

Looking Ahead to a Decade of Action

This updated edition supports the identification and preparation of road safety investment strategies and implementation projects in low and middle-income countries aimed at achieving the ambitious *Decade of Action* goal to save five million lives and avoid 50 million serious injuries by 2020. In shifting from advocacy to action accelerated knowledge transfer aligned with scaled-up road safety investment will be central to overcoming country capacity weaknesses which in the face of sustained economic growth and rapid motorization present a formidable barrier to success. The core guidelines and streamlined approach provided in the updated edition specify proven, pragmatic tools to help overcome this barrier and contribute to improved road safety results. It is anticipated that the guidelines will be increasingly used over the coming *Decade* and further updated when appropriate to reflect lessons learned in their applications and improvements made.

SECTION II

CORE GUIDELINES

1

Introduction

The World Health Organization (WHO) and the World Bank jointly issued the *World Report on Road Traffic Injury Prevention* (Peden et al, 2004)¹ on World Health Day 2004, dedicated by the WHO to the improvement of global road safety. The report's publication signaled a growing concern in the global community about the scale of the health losses associated with escalating motorization and a recognition that urgent measures had to be taken to sustainably reduce their economic and social costs.

1.1 Projected losses

The World Report sets out the most complete global data available on deaths and injuries from road crashes. It also presents projected future outcomes worldwide, if systematic and large-scale measures are not urgently taken to prevent them. Globally these deaths and injuries already create unacceptable public health, economic and social development losses. Every year an estimated 1.2 million people are killed and up to 50 million more people are injured or disabled on the world's roads.

World Bank projections indicate that global road fatalities will increase by more than 65 percent between the years 2000 and 2020, unless intensified safety interventions are implemented, with this trend varying across regions of the world (Table 1). Fatalities are predicted to increase by more than 80 percent in low and middle-income countries, but decrease by nearly 30 percent in high-income countries (Kopits, Cropper, 2003).²

Road deaths and injuries were projected by the path-breaking Global Burden of Disease Study to be the third leading contributor by 2020 to the global burden of disease and injury (Murray, Lopez, eds, 1996).³ This finding alerted the global community to the sheer scale of the emerging public health crisis unfolding on the world's roads. Revised estimates of global health losses from road traffic injuries indicate that road crash deaths and injuries in low and

Table 1: Predicted road traffic fatalities:

World Bank Region	% change 2000- 2020
South Asia	144%
East Asia & Pacific	80%
Middle East & North Africa	68%
Latin America & Caribbean	48%
Europe & Central Asia	18%
Sub-total	83%
High-income countries	-28%
Global total	66%

middle-income countries are now projected to be the 4th largest cause of healthy life years lost by the total population in 2030, compared with tuberculosis (26th) and malaria (15th). More specifically, globally road deaths are projected to be the leading cause of health losses for children (age 5 – 14) by 2015, and the second cause for men by 2030 (Loncar, Mathers, 2005).⁴ These latter impacts are sufficient to generate alarm and justify accelerated measures to address them.

The World Report highlights road safety as a social equity issue. Low and middle-income countries already bear about 90 percent of the current burden of road deaths and injuries and they will experience the greatest growth in casualty rates over the coming decades. A large proportion of crash victims in these countries will continue to be their more vulnerable road users such as pedestrians and cyclists. Road crashes have a disproportionate impact on the poor who experience limited access to post-crash emergency care and face costs and loss of income that can push families into poverty. Crude estimates of the economic costs of road deaths and injuries put them at an average of 1 percent of GNP for low-income countries, compared with 1.5 percent for middle-income countries and 2 percent for high-income countries. These costs could be higher, especially if under-representation of deaths and injuries in available statistics and the social costs of pain and suffering were fully accounted for.

1.2 Blueprint for action

Following its publication the *World Report* received wide acclaim and it motivated and provided a focus and framework for global, regional and country initiatives to reduce road deaths and injuries. A key message of the *World Report* is that road crash costs in low and middle-income countries were substantially avoidable, because successful programs in high-income countries over the last thirty years have demonstrated that road deaths and injuries are predictable and preventable. However, making the connection between this knowledge and effective action remains a challenge as the scale of investment in the prevention of road deaths and injuries is in no way commensurate with its growing public health priority in low and middle-income countries.

The *World Report* provides a blueprint for action to address the escalating crisis on the world's roads. It emphasizes that road safety is a responsibility shared by government, industry, business, nongovernmental organizations and international agencies, with participation by people from many disciplines and the wider community. It also highlights the complexity and hazardous nature of the road transport system, which must be understood as a whole and designed and operated to compensate for human vulnerability and fallibility. Vision Zero in Sweden and Sustainable Safety in the Netherlands are promoted by the *World Report* as leading examples of good practice and what has become termed the *Safe System* approach that all countries should aspire to. Governments are invited to assess the current status of road safety in their respective countries and the *World Report* makes a set of recommendations to assist this process. Low and middle-income countries lacking sufficient resources to fully apply these recommendations are encouraged to seek partnerships with international organizations and other entities to assist their implementation.

1.3 Institutional capacity weaknesses

The findings and recommendations of the *World Report* have since been endorsed and promoted by successive UN General Assembly and World Health Assembly Resolutions calling for action (see Annex 1).*

However, little evident progress has been made on implementing the recommendations and over the coming decade this job still remains to be done if the growing global road safety crisis is to be averted. Country safety management capacity weaknesses present a formidable barrier to progress and international

* Annexes 1 – 4 can be accessed in the full report from which this excerpt has been taken at worldbank.org/GRSF.

Box 1: Road safety management capacity weaknesses

Country capacity weaknesses present a formidable barrier to success and the central issue is how to accelerate the necessary process of shifting from weak to strong institutional management capacity to govern the production of improved road safety results. These guidelines have been designed to assist this process and they are particularly relevant to helping overcome the acute institutional capacity weaknesses evident in low and middle-income countries (Bliss, 2004).⁵ They are also relevant to high-income countries seeking higher levels of performance and can be used to guide the improvements in safety management capacity required to achieve it. For example, a recent review of road safety management capacity in Sweden revealed that achieving the level of ambition set by 'Vision Zero' will require systematic reforms to overcome revealed capacity weaknesses (Breen, Howard, Bliss; 2008).⁶

Capacity weaknesses are not just confined to countries. Global and regional institutional capacity to address road safety priorities is also weak and requires strengthening. Knowledge and skills within the international and regional development banks are lacking and there has been limited investment in building road safety management capacity by the UN Regional Economic Commissions and other UN and development agencies. For example, small-scale initiatives have been taken by the Global Road Safety Partnership (established by the World Bank in 1999 as part of its Business Partners for Development program), especially through their Global Road Safety Initiative, but these have made no quantifiable impact (GRSP, 2007).⁷ Other partners and stakeholders have coalesced under the auspice of the United Nations Road Safety Collaboration (UNRSC, 2008)⁸ and new entities have emerged such as the International Road Assessment Programme (iRAP, 2007)⁹, but again investment supporting this high priority initiative has been limited.

There is a growing global, regional and country demand for improved road safety which is becoming better focused and organized under the collective umbrella of the *World Report* findings and recommendations and the successive UN General Assembly Resolutions that have endorsed them (see Annex 1). Meeting this demand will require accelerated knowledge transfer and scaled-up investment to directly address the safety management capacity weaknesses underlying the poor and deteriorating road safety performance in low and middle-income countries.

development agencies are ill-prepared to act. Concerted action is required if sustainable success is to be achieved (see Box 1). The *World Report* recommendations highlight the need to address the core institutional management functions that produce road safety results and emphasize the key integration role played by the lead agency in orchestrating an effective and sustained national response.

Road safety management capacity weaknesses must be addressed as the highest priority, as current initiatives are insufficient to effect sustainable change. The challenge remains to generate the political will and associated global, regional and country leadership and resources required to successfully implement the *World Report* recommendations to achieve improved results. The mission and goals of the World Bank's Global Road Safety Facility (World Bank, 2007)¹⁰ address this imperative and they have been endorsed by the UN General Assembly (see Annex 1). They have also been supported by the Make Roads Safe campaign of the Commission for Global Road Safety which is seeking donor support for a ten-year global, regional and country action plan to be implemented by the Facility. Strong leadership is being shown by the Commission's campaign which also calls for road infrastructure safety funding and related global and regional measures to address road safety as a sustainable development priority (Commission for Global Road Safety, 2006).¹¹ However, the international response so far falls well short of the funding commitment sought for the coming decade. Ongoing dialogue with the donor community is being scheduled to mobilize resources heading up to the first Ministerial Conference on Global Road Safety in the Russian Federation in late 2009, which was called for by the Commission for Global Road Safety and endorsed in the United Nations General Assembly Resolution 62/244 adopted on 31 March 2008 (see Annex 1). It is clear that sustained political will and a long-term investment program are required to implement the *World Report* recommendations on a systematic basis that accelerates international and country efforts and scales up current responses.

Global and regional initiatives have heightened country awareness of road safety issues and there has been considerable transfer of relevant knowledge on safety interventions since the publication of the *World Report*. There have also been stronger calls for international support as evidenced, for example, by the Accra Declaration of African Ministers responsible for Transport and Health (Economic Commission for Africa and World Health Organization).¹² Countries are becoming more sensitized to the road safety problems they must address, in terms of being aware that they must improve road user behavior and the safety of road infrastructure and vehicles, and they are now seeking advice on how to do it. Institutional management functions at the country level are increasingly becoming the center of attention and concern. This underscores the emphasis in these guidelines on mobilizing financial and human resources for capacity strengthening purposes, as country priorities are becoming more focused on building sustainable management systems and related financing functions.

1.4 Purpose of guidelines

The purpose of these guidelines is to promote a *Safe System* approach to road safety management and specify a management and investment framework to support the successful implementation of the *World Report* recommendations. The guidelines provide practical procedures designed for application at a country level to accelerate knowledge transfer and sustainably scale up investment to improve road safety results. They have been prepared to assist country road safety professionals, World Bank and regional development bank staff, international consultants, community groups, private sector organizations, and all other global, regional and country partners and stakeholders supporting country road safety investments. Their emphasis on strengthening institutional results management capacity reflects the essence and intention of the *World Report* recommendations. It also recognizes that strengthened road safety management is required for the successful implementation of the Good Practice Guidelines for interventions (helmets, drink driving, speed, and seat-belts) produced by the World Health Organization, the FIA Foundation for the Automobile and Society, the Global Road Safety Partnership and the World Bank.^{13, 14, 15, 16}

References

- ¹ Eds. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C (2004). *World Report on Road Traffic Injury Prevention*, World Health Organization, Geneva.
- ² Kopits E, Cropper M (2003). *Traffic Fatalities and Economic Growth*. 2003. Policy Research Working Paper Number 3035. The World Bank, Washington, DC.
- ³ Murray CJL, Lopez AD eds. (1996). *The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability From Diseases, Injuries and Risk Factors in 1990 and Projected to 2020*. Harvard University Press, Boston.
- ⁴ Mathers C, Loncar D (2005). *Updated projections of global mortality and burden of disease, 2002 – 2030: data sources, methods, and results*. Evidence and Information for Policy Working Paper, World Health Organization, Geneva.
- ⁵ Bliss T (2004). *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention*, Transport Note TN-1, The World Bank, Washington, DC.
- ⁶ Breen J, Howard E, Bliss T (2008). *Independent Review of Road Safety in Sweden*, Jeanne Breen Consulting, Eric Howard and Associates, and the World Bank.
- ⁷ Global Road Safety Partnership (2007). *Annual Report*, Geneva, Switzerland
- ⁸ United Nations Road Safety Collaboration (2008). Geneva, Switzerland. <http://www.who.int/roadsafety>
- ⁹ International Road Assessment Program (2007). *Getting Organized to Make Roads Safe*, Basingstoke, United Kingdom.
- ¹⁰ World Bank Global Road Safety Facility (2007). *Strategic Plan 2006 – 2015*. The World Bank, Washington DC.
- ¹¹ Commission for Global Road Safety (2006). *Make Roads Safe. A New Priority for Sustainable Development*, Commission for Global Road Safety, London.
- ¹² Economic Commission for Africa and World Health Organization (2007). *Accra Declaration of African Ministers of Transport and Health*, Ministerial Round Table, African Road Safety Conference, Accra.
- ¹³ FIA Foundation for the Automobile and Society (2008). *Seat-belts and child restraints: a road safety manual for decision-makers and practitioners*, London.
- ¹⁴ Global Road Safety Partnership (2007). *Drinking and driving: a road safety manual for decision-makers and practitioners*, Geneva.
- ¹⁵ Global Road Safety Partnership (2008). *Speed management: a road safety manual for decision-makers and practitioners*, Geneva.
- ¹⁶ World Health Organization (2006). *Helmets: a road safety manual for decision-makers and practitioners*, Geneva.

2

World Report Recommendations

The findings of the *World Report* culminated in six overarching recommendations that set out the strategic initiatives necessary to improve country road safety performance (Peden et al, 2004).¹

2.1 Recommendations

Recommendation 1 | *Identify a lead agency in government to guide the national road safety effort.*

This recommendation stresses the importance of institutional leadership which derives from a designated legal authority that has the power to make decisions, manage resources and coordinate the efforts of all participating sectors of government.

Lead agencies can take different institutional forms, but they must be adequately funded and publicly accountable for their performance. They must also actively engage and collaborate with all groups in society that can contribute to improved safety outcomes. Their effectiveness is considerably enhanced by strong and sustained political support for the initiatives they promote.

The vital lead agency role in directing and sustaining the production of improved road safety results is outlined in section 3.2 and more detail is provided in Annex 2. Related institutional structures and processes are specified in Annex 3, and detailed country case studies are set out in Annex 4.

Guidelines to assess and strengthen the lead agency role are provided in section 4.2.6.

Recommendation 2 | *Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in each country.*

This recommendation complements the importance of the lead agency role and underscores the complexity of managing road network safety across institutional structures responsible for delivering and sustaining safety improvements. Before effective action can be taken institutional capacity to implement injury prevention measures must be appraised and weaknesses addressed.

Section 3 addresses the essential elements of the road safety management system and provides a framework for assessing institutional capacity to deliver improved road safety results and preparing projects to overcome

identified capacity weaknesses. High quality data on road safety performance are central to the process of identifying safety problems. As a high priority cost-effective data systems consistent with international standards for recording and classifying road deaths and injuries should be established as part of the capacity building process.

Procedures and checklists to assist the conduct of a country safety management capacity review are provided in section 4.2.

Recommendation 3 | *Prepare a national road safety strategy and plan of action.*

This recommendation further underscores the institutional complexities that must be addressed at the country level by highlighting the multisectoral and multidisciplinary dimensions of an effective national road safety strategy. Such a strategy must cover the safety requirements of all road users and engage all stakeholders across government, the private sector, nongovernmental organizations, the media and the general public. It should also be linked to strategies in other sectors (e.g. environment, health, urban planning) and set ambitious safety targets, complemented by a national program setting out specific interventions to achieve them within specified timeframes.

In countries where safety management capacity is weak the preparation of an effective national road safety strategy and related program of investment must be staged, to first of all build the institutional capacity and knowledge necessary to sustain the delivery of a targeted action plan at the country level. This will require a progressively scaled up program of institutional strengthening and targeted interventions to reach a stage where national initiatives can be managed and sustained on a long-term basis.

Guidelines for the specification of a staged investment strategy and the preparation of related safety projects are provided in sections 4.2.7 and 4.3.

Recommendation 4 | *Allocate financial and human resources to address the problem.*

This recommendation complements the previous recommendation concerning the preparation of a national road safety strategy and the related institutional capacity required to underpin and sustain it. In countries where safety management capacity is weak new funding will have to be found for the required level of investment to meet ambitious targets. Without adequate funding and skilled people institutional structures and processes are ineffective and national action plans remain paper plans.

Cost-benefit analysis has an important role to play in setting expenditure priorities for road traffic injury prevention. Training programs across a range of disciplines will be required to build the skills to develop and implement national road safety strategies. Participation in global and regional training networks and international conferences can help accelerate this knowledge transfer process and further strengthen country capacity.

Guidelines for the preparation of projects are provided in section 4.3 and these specifically address capacity building priorities with the promotion of a learning by doing model that accelerates knowledge transfer and achieves quick proven results that can generate benchmark measures to dimension an investment program to further roll-out successful initiatives.

Recommendation 5 | *Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions.*

This recommendation summarizes the range of good practice interventions that could be considered by all countries. Specific country-based initiatives should be based on sound evidence, be culturally appropriate, and form part of a targeted national road safety strategy. They should also be evaluated for their effectiveness.

However, it should be noted that a focus on interventions alone has proved to be ineffective in terms of addressing poor road safety performance at the country level. Attention must be paid to all elements of the road safety management system, and in particular institutional ownership and accountability for results, if sustainable improvements in road safety performance are to be assured.

Guidelines to assist the preparation of interventions are provided in section 4.3.4.

Recommendation 6 | *Support the development of national capacity and international cooperation.*

This recommendation calls for a substantial scaling up of international efforts to build a global and regional partnership focused on strengthening capacity at the country level to deal with the growing road safety crisis.

United Nations agencies, development banks, nongovernmental organizations, multinational corporations, philanthropic foundations and donor countries and agencies all have an important role to play in increasing support for global road safety just as provided for other health problems of comparable magnitude.

Leadership, coordination and an ongoing process engaging relevant government ministers will be required to develop and endorse a global plan of action that is consistent with other global initiatives such as the Millennium Development Goals.

A framework for building global, regional and country capacity and creating the resources necessary to target initiatives on a scale capable of producing sustainable results is discussed in section 3.4.

2.2 Implementing the recommendations

The six *World Report* recommendations address the continuum of actions required to bring road safety outcomes within a country under control and must be treated as a totality to ensure their effective implementation. However, it cannot be assumed that countries and the international community inherently possess the political will and capacity to act upon them. The reality is far removed from this as evidenced by the limited increases in road safety investment at international and country levels since the *World Report* was released. It also cannot be assumed that partial implementation of the recommendations in the short term will be effective, however appealing signs of proliferating small scale initiatives within a country and region might be. A sustained, systematic and scaled-up national effort is necessary and purposeful targeted investment is required for this.

At the country level account must be taken of existing institutional management arrangements and a staged process developed to ensure that institutional strengthening initiatives are properly sequenced and adjusted to the absorptive and learning capacity of the country concerned. For example, as noted with recommendations 3 and 4, past experience with the preparation of national action plans in low and middle-income countries has often resulted in ‘paper plans’ which have taken no account of country ownership and institutional delivery capacity and consequently have never been implemented. Likewise, as noted with recommendation 5, institutional ownership of interventions and accountability for their performance are vital to sustainable success.

At the global and regional levels account must be taken of emerging initiatives designed to assist the acceleration of knowledge transfer to low and middle-income countries and the scaling up of their road safety investments. It will be important to harmonize these initiatives and to actively seek partnership opportunities that can combine and leverage the effective weight of resources being mobilized and enhance their likelihood of achieving measurable improvements in road safety performance.

These guidelines systematically address these issues and present a targeted approach designed to overcome the institutional capacity barriers impeding the effective implementation of the *World Report* recommendations at the global, regional and country levels. They build on the experience gained by the World Bank over

Box 2: Institutional complexity and scale of investment

It is important to reflect on the level of political will and dedicated institutional effort to manage road safety results evident in high-income countries, as recognition of this was only implicitly stated in the *World Report* outside of its recommendations. Substantial investment in institutional capacity is vital to success and so far insufficient attention has been paid to the institutional benchmarks for good performance set by high-income countries. When considering the strategic policy challenges faced by low and middle-income countries this omission is critical and without directly addressing it little sustained success can be anticipated. Likewise aspirations for higher levels of performance in high-income countries require ongoing attention to be paid to the institutional management functions that underpin and drive the achievement of improved road safety results.

Case studies are provided in Annexes 2 - 4 to highlight the importance of the lead agency role in directing the national road safety effort. The case studies are instructive in their own right in terms of highlighting the institutional complexity and scale of investment evident in high-income countries where safety outcomes are successfully managed and performance shows continuous improvement.

the last thirty years in supporting road safety initiatives in low and middle-income countries and draw heavily on the practical lessons learned during this process. The ultimate goal is to improve country road safety performance rapidly and sustainably.

Successful road safety management systems in high-income countries are institutionally complex and require considerable and sustained investment, as evidenced in the case studies presented in Annexes 2 – 4 (see Box 2). The following section distils the lessons learned in high-income countries. It specifies the key elements of an effective road safety management system that underpins the guidelines provided for the comprehensive assessment of country road safety management capacity and specification of lead agency reforms, long-term country investment strategies and implementation projects.

Road safety management systems have evolved over the last fifty years in high-income countries and these guidelines promote the *Safe System* approach (see section 3.1.4). The challenge for low and middle-income countries will be to benefit from what has been learned and accelerate their adoption and adaptation of good practice to avoid the unnecessary and unacceptably high level of deaths and injuries resulting from the evolutionary pathway taken by high-income countries. The challenge for high-income countries will be to continue to innovate on the basis of sound safety principles and go beyond what is currently known to be effective, to achieve even higher levels of performance. These guidelines have been prepared to assist this process and they can be applied in any country, irrespective of its development status or road safety performance.

References

¹ Eds. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C (2004). *World Report on Road Traffic Injury Prevention*, World Health Organization, Geneva.

3

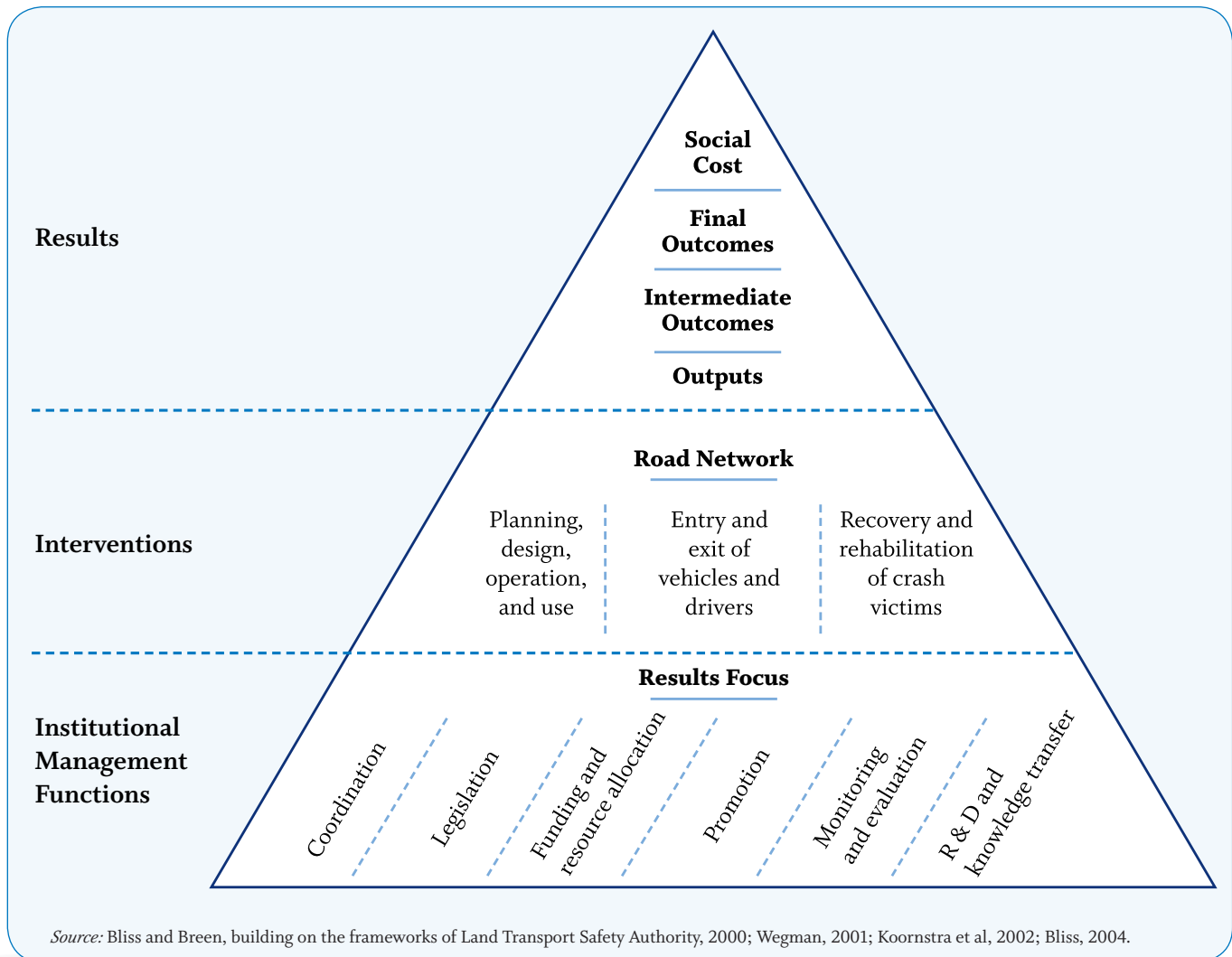
Managing for Results

The recommendations of the *World Report* highlight safety management issues at the global, regional and country levels, and emphasize the building of institutional capacity to manage for results. In particular the recommendations emphasize the importance of implementing a systematic and sustained response to govern road safety outcomes at the country level, and place prime importance on the vital role of the lead agency in this process. These implementation guidelines focus on strengthening the road safety management system and place special emphasis on related lead agency responsibilities in ensuring institutional efficiency and effectiveness.

3.1 Road safety management system

The road safety management system as depicted in Figure 1 can be viewed as three inter-related elements: *institutional management functions, interventions and results*. Managing for road safety results requires an integrated and accountable response to these system elements.

This road safety management system model derives from New Zealand's comprehensive 2010 target setting framework which linked desired results with interventions and related institutional implementation arrangements (Land Transport Safety Authority, 2000).¹ The New Zealand framework was adopted by the European Transport Safety Council (Wegman, 2001)² which highlighted its results management framework, and it was further elaborated by the Sunflower Project (Koornstra *et al*; 2002)³ which located the institutional implementation arrangements in the broader context of country 'structure and culture'. The first World Bank guideline concerning the implementation of the *World Report* recommendations (Bliss, 2004)⁴ used the framework to introduce prototype safety management capacity review tools. This updated guideline refines these tools and further defines the organizational manifestation of the Sunflower Project 'structure and culture' in terms of seven institutional management functions.

Figure 1: Road safety management system

As defined the road safety management system has a number of generic characteristics that allow for its universal application to all countries, irrespective of their development status or road safety performance, as follows:

It places an emphasis on the production of road safety, and recognizes that safety is produced just like other goods and services. The production process is viewed as a management system with three levels: institutional management functions which produce interventions, that in turn produce results. Much of the day-to-day road safety debate is concerned with interventions alone and use of the management system opens up the discussion to the important and often neglected issues of institutional ownership and accountability for results.

It is neutral to country structures and cultures which shape the way institutions function and goals are set and achieved. Any country can use this framework and adapt their road safety initiatives to it.

- It accommodates evolutionary development. This is illustrated by the evolving focus on results that has been evident in high-income countries through to its ultimate expression in the *Safe System* approach (see section 3.1.4). In any particular phase of development the system can be used to review road safety management capacity and prepare related strategies and programs.

- It applies to any given land use/transportation system and takes as given the current and projected exposure to risk arising from that system. However, it can also manage the land use/transport trade-offs by considering these as options in the desired focus on results and addressing them with interventions concerning the planning, design, operation and use of the road network and the entry and exit of vehicles and road users to this network.
- It takes the road network as its frame of reference and locates the deaths and injuries that are avoidable. The three intervention categories are defined in terms of the road network and have strong spatial dimensions. This distinguishes the system from earlier frameworks that emphasized safer roads, safer vehicles, and safer people, without locating them specifically in the network contexts where deaths and serious injuries occur. It focuses safety interventions on where the network fails, or is prone to failure, as is the case with other transport modes.

Consideration of all elements of the road safety management system and the linkages between them becomes critical for any country seeking to identify and improve its current performance levels. More specifically, assessing and strengthening country capacity in terms of these elements and linkages is critical to the successful implementation of the *World Report* recommendations.

3.1.1 *Institutional management functions*

Seven institutional management functions provide the foundation on which road safety management systems are built: they produce the interventions to achieve the desired long and medium-term road safety results (expressed as a vision and related performance targets) which have been agreed across the road safety partnership at national, regional and local levels. Without effective institutional management across these functions a country has little chance of implementing successful road safety interventions and achieving desired results on a sustainable basis.

The institutional management functions are delivered primarily by all the government entities producing interventions, but they are also delivered in government partnerships with civil society and business entities to achieve the desired focus on results (a more detailed description of these functions is provided in Annex 2).

(i) Results focus

In managing for improved road safety results, the foremost and pivotal institutional management function is *results focus*. All the other institutional management functions are subordinate to this function and contribute to its achievement. A country's results focus can be interpreted as a pragmatic specification of its ambition to improve road safety and the means agreed to achieve this ambition. In the absence of a clear and accountable focus on results all other institutional functions and related interventions lack cohesion and direction and the efficiency and effectiveness of safety initiatives can be undermined.

Results focus in its ultimate expression concerns a strategic orientation that links all actual and potential interventions with results, analyses what can be achieved over time, and sets out a performance management framework for the delivery of interventions and their intermediate and final outcomes. It defines the level of safety that a country wishes to achieve expressed in terms of a vision, goals, objectives and related targets.

(ii) Coordination

Coordination concerns the orchestration and alignment of the interventions and other related institutional management functions delivered by government partners and related community and business partnerships to achieve the desired focus on results. It is addressed across four key dimensions:

- horizontally across central government
- vertically from central to regional and local levels of government
- specific delivery partnerships between government, non-government and business at the central, regional and local levels
- parliamentary relations at central, regional and local levels

To be effective, coordinating arrangements must allow for accountable decision-making at senior institutional levels. These arrangements must be appropriately resourced, including a dedicated secretariat to harmonize delivery arrangements across partner agencies to achieve road safety results and serve as a platform for mobilizing political will and resources.

(iii) Legislation

Legislation concerns the legal instruments necessary for governance purposes to specify the legitimate bounds of institutions, in terms of their responsibilities, accountabilities, interventions and related institutional management functions to achieve the desired focus on results.

This function ensures that legislative instruments for road safety are well matched to the road safety task. Road safety legislation typically addresses land use, road, vehicle, and user safety standards and rules and compliance with them, as well as post-crash medical care. A mixture of specialist legislative and technical expertise is needed within government to develop and consult on enforceable standards and rules with due consideration to cost, effectiveness, practicality and public acceptability.

(iv) Funding and resource allocation

Funding and resource allocation concerns the financing of interventions and related institutional management functions on a sustainable basis using a rational evaluation and programming framework to allocate resources to achieve the desired focus on results.

This function seeks to ensure that road safety funding mechanisms are sufficient and sustainable. As part of this a rational framework for resource allocation allows the making of a strong business case for road safety investments based on cost-effectiveness and cost-benefit analyses. To achieve more ambitious performance targets countries may need to establish new funding sources and mechanisms.

(v) Promotion

Promotion concerns the sustained communication of road safety as a core business for government and society and emphasizes the shared societal responsibility to support the delivery of the interventions required to achieve the desired focus on results.

This function goes beyond the understanding of promotion as road safety advertising supporting particular interventions and addresses the overall level of ambition set by government and society for road safety performance.

(vi) Monitoring and evaluation

Monitoring and evaluation concerns the systematic and ongoing measurement of road safety outputs and outcomes (intermediate and final) and the evaluation of interventions to achieve the desired focus on results.

Periodic monitoring and evaluation of road safety targets and programs is essential to assess performance and to allow adjustments to be made. The establishment and sustainable funding of transport registries for drivers and vehicles, crash injury databases and periodic survey work to establish performance and exposure data is typically the responsibility of several different government agencies - transport, police, and health. In some countries, government insurance departments or organizations and university departments also share responsibility. The organization of independent inspection, audit and review are also part of this function.

(vii) Research and development and knowledge transfer

Research and development and knowledge transfer concerns the systematic and ongoing creation, codification, transfer and application of knowledge that contributes to the improved efficiency and effectiveness of the road safety management system to achieve the desired focus on results.

This vital institutional management function has guided the design and implementation of national strategies that have sustained reductions in road deaths and injuries, in the face of growing mobility and exposure to risk. It aims to produce a cadre of international, national and local professionals who can contribute research-based approaches and knowledge to road safety policy, programs and public debate. Knowledge transfer must be grounded in practice by a learning by doing process, backed with sufficient targeted investment to overcome the barriers presented by the evident capacity weaknesses at the global, regional and country levels. Strong and sustained international cooperation will be required to mobilize knowledge transfer resources and support services commensurate with the sheer scale of the global losses arising from escalating road deaths and serious injuries.

3.1.2 Interventions

Interventions are shaped to achieve the desired focus on results. As depicted in Box 3 they address the safe planning, design and operation and use of the road network, the conditions under which vehicles and road users can safely use it, and the safe recovery and rehabilitation of crash victims; and they set specific standards and rules to achieve this safety and aim to secure compliance with them.

Box 3: Classification of interventions

Intervention types	Standards and rules	Compliance
Planning, design, operation and use of the road network.	Standards and rules cover the safe planning, design, construction, operation and maintenance of the road network; and govern how it is to be used safely by setting speed and alcohol limits, occupant restraint and helmet requirements, and restrictions on other unsafe behaviors.	Compliance aims to make road builders and operators, the vehicle and transport industry, road users and emergency medical and rehabilitation services adhere to safety standards and rules, using a combination of education, enforcement and incentives.
Conditions of entry and exit of vehicles and road users to the road network.	Standards and rules also address vehicles safety standards and driver licensing requirements.	
Recovery and rehabilitation of crash victims from the road network.	Standards and rules can also be set for the delivery of emergency medical and rehabilitation services to crash victims.	

Source: Bliss, 2004.⁴

These guidelines are designed to draw on the comprehensive findings on interventions presented in the *World Report* which they do not attempt to reproduce. For the purposes of specifying country investment strategies and related implementation projects, information on interventions should be sourced from the *World Report* and the comprehensive literature it cites.

3.1.3 Results

The final element of the road safety management system concerns the measurement of the desired results and their expression as targets in terms of final outcomes, intermediate outcomes, and outputs, as shown in Box 4 (Bliss, 2004)⁴. Targets define the desired safety performance endorsed by governments at all levels, stakeholders and the community. The level of safety is ultimately determined by the quality of the delivered interventions, which in turn are determined by the quality of the country's institutional management functions.

Good practice countries set quantitative outcome and intermediate outcome targets to achieve their desired results focus. They can also set related quantitative output targets in line with the targeted outcomes.

Box 4: Safety targets

Final outcomes	Final outcomes can be expressed as a long term vision of the future safety of the road traffic system (e.g. as in <i>Vision Zero</i> and <i>Sustainable Safety</i>) and as more short to medium-term targets expressed in terms of social costs, fatalities and serious injuries presented in absolute terms and also in terms of rates per capita, vehicle and volume of travel.
Intermediate outcomes	Intermediate outcomes are linked to improvements in the final outcomes and typical measures include average traffic speeds, the proportion of drunk drivers in fatal and serious injury crashes, seatbelt-wearing rates, helmet-wearing rates, the physical condition or safety rating of the road network, and the standard or safety rating of the vehicle fleet.
Outputs	Outputs represent physical deliverables that seem improvements in intermediate and final outcomes and typical measures include kilometers of engineering safety improvements, the number of police enforcement operations required to reduce average traffic speeds and the number of vehicle safety inspections, or alternatively they can correspond to milestones showing a specific task has been completed.

Source: Bliss, 2004.⁴

3.1.4 Evolution of results focus

Successive shifts in road safety management thinking and practices in high-income countries have been evident over the last fifty years. Rapid motorization and escalating road deaths and injuries began in many OECD countries in the 1950s and 1960s and concurrently the ambition to improve road safety outcomes began to grow.

Since the 1950s there have been four significant phases of development which have become progressively more ambitious in terms of the results desired.

(i) Results Focus – Phase 1: Focus on driver interventions

In the 1950s and 60s safety management was generally characterized by dispersed, uncoordinated, and insufficiently resourced institutional units performing isolated single functions (Trinca et al, 1988)⁵. Road safety policies placed considerable emphasis on the driver by establishing legislative rules and penalties, supported by information and publicity, and expecting subsequent changes in behavior. It was argued that since human error contributed mostly to crash causation it could be addressed most effectively by educating and training the road user to behave better. Placing the onus of blame on the road traffic victim acted as a major impediment to the appropriate authorities fully embracing their responsibilities for a safer road traffic system (Rumar, 1999)⁶.

The weaknesses inherent in this approach are increasingly evident, but its enduring appeal should not be underestimated and it often dominates and captures the public and political debate.

(ii) Results Focus - Phase 2: Focus on system-wide interventions.

In the 1970s and 1980s, these earlier approaches gave way to strategies which recognized the need for a systems approach to intervention. Dr. William Haddon, an American epidemiologist, developed a systematic framework for road safety based on the disease model which encompassed infrastructure, vehicles and users in the pre-crash, in-crash and post-crash stages (Haddon, 1968)⁷. Central to this framework was the emphasis on effectively managing the exchange of kinetic energy in a crash which leads to injury, to ensure that the thresholds of human tolerances to injury were not exceeded. The scope of policy broadened from an emphasis on the driver in the pre-crash phase to also include in-crash protection (both for roadsides and vehicles) and post-crash care. This focused road safety management on a system-wide approach to interventions and the complex interaction of factors which influence injury outcomes. It underpinned a major shift in road safety practice which took several decades to evolve. However, the focus remained at the level of systematic intervention and did not directly address the institutional management functions producing these interventions or the results that were desired from them.

The strengths of this approach mask its inherent weakness as being viewed as embracing all the essential elements of the road safety management system, whereas the institutional context is not directly addressed. In many ways much of the contemporary debate on road safety is still bounded by the dimensions of the ‘Haddon Matrix’ which only addresses system-wide *interventions* and for this reason institutional management functions and the related focus on results still receive limited attention.

(iii) Results Focus - Phase 3: Focus on system-wide interventions, targeted results and institutional leadership.

By the early 1990s good practice countries were using action focused plans with numerical outcome targets to be achieved with packages of system-wide measures based on the evidence generated from ongoing monitoring and evaluation. It became clear that growing motorization need not inevitably lead to increases in death rates but could be reversed by continuous and planned investment in improving the quality of the traffic

system. The United Kingdom, for example, halved its death rate (per 100,000 head of population) between 1972 and 1999 despite a doubling in motorised vehicles. Stronger expressions of political will were evident and institutional management functions were becoming more effective. Institutional leadership roles were identified, inter-governmental coordination processes were established and funding and resource allocation mechanisms and processes were becoming better aligned with the results required. Developments in Australasian jurisdictions (e.g. Victoria and New Zealand) further enhanced institutional management functions concerning results focus, multisectoral coordination, delivery partnerships, and funding mechanisms (WHO, 2004; Bliss, 2004; Wegman *et al*, 2006; Trinca *et al*, 1988)^{8, 4, 9, 5}. Accountability arrangements were enhanced by the use of target hierarchies linking institutional outputs with intermediate and final outcomes to coordinate and integrate multisectoral activities. This phase laid the foundation for today's good practice and reflects the state of development found in many higher performing countries today.

The strengths of this approach can turn into weaknesses to the extent that the focus on safer people, safer vehicles, safer roads and safer systems diverts attention away from the road network where the actual deaths and injuries are incurred. Successful targeted plans have achieved large measurable gains in improved road user behaviour and this success helped to reinforce the earlier approach which focused purely on driver interventions. The sharpened emphasis on setting ambitious but achievable targets could also inhibit innovation, to the extent that targets are bounded by what is deemed to be technically feasible and institutionally manageable, thus blunting the aspiration to go beyond what existing evidence suggests is feasible.

(iv) Results Focus - Phase 4: Focus on Safe System long-term elimination of deaths and serious injuries and shared responsibility.

By the late 1990s, two of the world's best performing countries had determined that improving upon the ambitious targets that had already been set would require rethinking of interventions and institutional arrangements. The Dutch *Sustainable Safety* and Swedish *Vision Zero* strategies set a goal to make the road system intrinsically safe (Wegman *et al*, 1997; Tingvall, 1995; Committee of Inquiry into Road Traffic Responsibility, 1999).^{10, 11, 12} The emphasis on effectively managing the exchange of kinetic energy in a crash to ensure that the thresholds of human tolerances to injury were not exceeded (as originally promoted in Phase 2) was revitalized and given an ethical underpinning in the sense that road deaths and injuries were seen as an unacceptable price for mobility. The implications of this level of ambition are still being worked through in the countries concerned and elsewhere. These strategies recognize that speed management is central and have re-focused attention on road and vehicle design and related protective features. The blame the victim culture is superseded by blaming the traffic system which throws the spotlight on the shared responsibility and accountability for the delivery of a *Safe System*.

For example, *Vision Zero* aims for an approach in which vehicle design delivers a protected occupant into a road system where conflict is minimized by design and energy transfer in crashes is safely controlled. In this system, users comply with risk-averse behavioral norms created by education, enforcement and incentives. The emphasis is on road users' right to health in the transport system and to demand safer systems from decision-makers and road and vehicle providers.

The strengths of this approach are becoming increasingly evident. What was previously seen as radical and unachievable by many road safety practitioners and policy-makers has quickly become the benchmark and central debating point for analyses of what constitutes acceptable road safety results. The tools and accumulated practices used to support the results management framework for the *Safe System* approach are the same as those used in the past to prepare targeted national plans. Targets are still set as milestones to be achieved on the path to the ultimate goal, but the interventions are now shaped by the level of ambition, rather than vice versa. Innovation becomes a priority to achieve results that go well beyond what is currently known to be achievable. In moving forward the *Safe System* approach reinterprets and revitalizes what is already known about road safety, and raises critical issues about the wider adoption of interventions that have proven to be effective in eliminating deaths and serious injuries (e.g. median barriers). The question becomes one of how

to more comprehensively and rapidly introduce these proven safety interventions, and indeed this question applies to all elements of the road safety management system with potential for improvement.

The shift to a *Safe System* approach is also well attuned to the high priority global, regional and country goals of sustainability, harmonization and inclusiveness. A *Safe System* is dedicated to the elimination of deaths and injuries that undermine the sustainability of road transport networks and the communities they serve. Its focus on safer and reduced speeds harmonizes with other efforts to reduce local air pollution, greenhouse gases and energy consumption. And its priority to afford protection to all road users is inclusive of the most vulnerable at-risk groups such as pedestrians, young and old, and cyclists and motorcyclists. These co-benefits of shifting to a *Safe System* approach further strengthen the business case for its implementation.

3.1.5 Conducting capacity reviews

Implementing the recommendations of the *World Report* requires account to be taken of the management capacity in the country concerned to ensure that institutional strengthening initiatives are properly sequenced and adjusted to its absorptive and learning capacity. The road safety management system outlined in section 3.1 provides the framework for the conduct of a comprehensive country safety management capacity review and procedures for this are detailed in section 4.2. The central issue is how to accelerate the necessary process of shifting from weak to strong institutional management capacity to govern the production of improved road safety results. The conduct of such a capacity review is a vital first step in the process of a country taking the necessary actions to tailor the *World Report* recommendations to its unique circumstances and in determining its state of readiness to commit to the productive and sustainable steps necessary to bring its road safety outcomes under control. Such a review sets out an integrated multisectoral framework for dialogue with key partners and stakeholders on potential road safety investments and it assesses the level of government ownership of road safety results. It also serves to identify related institutional responsibilities and accountabilities and provides a platform to reach an official consensus on country capacity weaknesses and how best to overcome them.

Assessing safety management capacity first requires consideration of a country's results focus. The other institutional management functions are subordinate to this function and contribute to its achievement. Results focus can be interpreted as a pragmatic specification of a country's ambition to improve road safety and the means agreed to achieve this. Without a clear focus on results the road safety management system lacks cohesion and the efficiency and effectiveness of related safety programs can be undermined. The lead agency plays a dominant role in determining the desired level of country safety performance and mobilizing the necessary investment to achieve it.

In alignment with the *World Report* recommendations, key deliverables of a country capacity review include an assessment of the lead agency role and related institutional strengthening initiatives, the specification of a long-term investment strategy to accelerate the process of shifting from a weak to high capacity safety management system, and the identification of related implementation projects.

3.2 Role of the lead agency

The first and crucial recommendation in the *World Report* concerned the identification of a lead agency in government to guide the national road safety effort, with the power to make decisions, manage resources and coordinate the efforts of all participating sectors of government. While implementing this recommendation at one level seems straightforward many complexities must be addressed. Road safety management is a multisectoral responsibility with government institutions making the dominant contribution. Civil society and business institutions also share road safety responsibilities, but these are anchored within the results focus set out and agreed in the national road safety strategy. In this broader context there is the strong possibility that shared road safety responsibilities will be submerged by competing interests. Hence effective organization to achieve desired road safety results requires strong leadership and in good practice countries this role is played by a lead governmental agency.

The lead agency plays a dominant role in most of the institutional management functions described in section 3.1.1, but in some instances it plays more of a guiding, encouraging or catalytic role. Details of the lead agency role are provided in Annex 2. The lead agency takes responsibility within government for the development of the national road safety strategy and its results focus – the overarching institutional management function. It usually also takes responsibility for horizontal inter-governmental coordination arrangements; vertical coordination of national, regional and local activity; coordination of the necessary delivery partnerships between government stakeholders, the professional, non-governmental and business sectors and Parliamentary groups and committees; ensuring a comprehensive legislative framework; securing sustainable sources of annual funding and creating a rational framework for resource allocation; high-level promotion of road safety strategy across government and society; periodic monitoring and evaluation of road safety performance; and the direction of research and development and knowledge transfer.

A key deliverable of a country capacity management review is an assessment of the lead agency role and recommendations for strengthening revealed weaknesses. Guidelines for this are provided in section 4.2.6. While the lead agency role can be clearly reviewed in terms of its contribution to the effective delivery of core institutional management functions, organizationally it can take on varied structural and procedural forms and there is no single model for this that can be promoted. Good practice examples are summarized in Annexes 3 & 4.

3.3 Country investment model

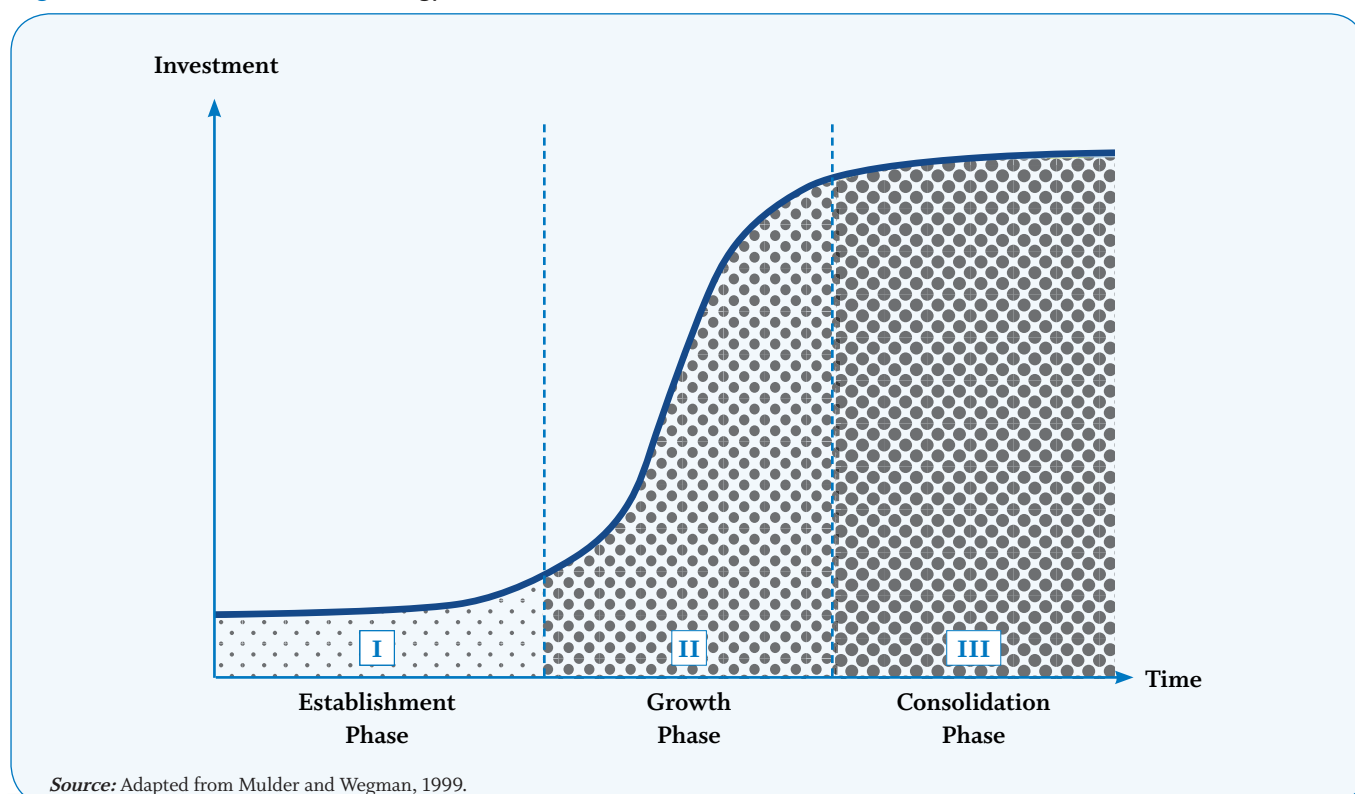
The other key deliverables of a country capacity management review addressing the *World Report* recommendations are the specification of a long-term investment strategy to accelerate the process of shifting from a weak to high capacity safety management system, and the identification of related *Safe System* implementation projects.

3.3.1 Building management capacity

Safety management capacity weaknesses in low and middle-income countries present a formidable barrier to progress and institutional management functions require strengthening. A clearly defined results focus is often absent and this reflects the lack of leadership of a targeted strategy that is owned by the government and relevant agencies and where responsibilities and accountabilities for its achievement are clearly specified and accepted. As a consequence coordination arrangements can be ineffective, supporting legislation fragmented, funding insufficient and poorly targeted, promotional efforts narrowly and sporadically directed to key road user groups, monitoring and evaluation systems ill-developed, and knowledge transfer limited. Interventions are fragmented and often do not reflect good practice. Little is known about the results they achieve (Bliss, 2004; World Bank Global Road Safety Facility, 2007).^{4,13} Building sustainable safety management capacity in these circumstances requires a long-term, staged investment strategy that clearly sets out the sequential priorities that must be addressed to achieve the desired focus on results.

Likewise safety management capacity weaknesses can also become evident in high-income countries, as their results focus shifts to even higher levels of ambition. For example, a recent review of road safety in Sweden highlighted the highly advanced nature of its road safety management system when benchmarked internationally, but still found that it required considerable strengthening to ensure the achievement of its ambitious goal of death and serious injury elimination (Breen, Howard & Bliss, 2008).¹⁴ Again a long-term investment strategy is required to implement the desired results focus. As with low and middle-income countries it must be designed to overcome revealed capacity weaknesses by first building a core capacity to bring targeted safety outcomes under control, then scaling up investment to accelerate this capacity strengthening and achievement of improved results across the national road network, and finally consolidating it, as depicted in Figure 2.¹⁵

Figure 2: Phases of investment strategy

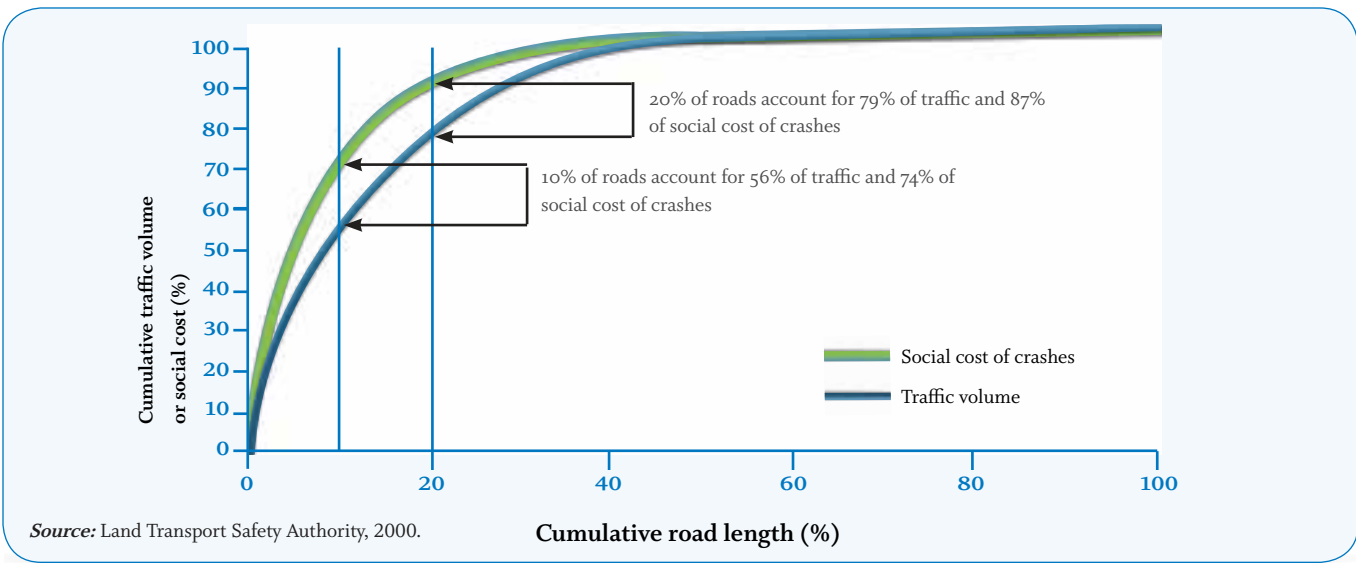


This staged approach to investment acknowledges the barriers imposed by weak safety management capacity and addresses the challenge of accelerating the necessary process of institutional strengthening required to effectively govern the production of improved road safety results. It recognizes the longer-term implications of immediate actions and plans the necessary scaling up of investment required to achieve a sustainable path where safety outcomes are brought under control.

In effect the long-term investment strategy is implemented by a program of successive projects that build on the results achieved and the management capacity created in the process. The findings of the capacity review will influence the scale of funding available and assist the preparation of business cases for additional funding. Guidelines to assist the specification of a long-term investment strategy are presented in section 4.2.7.

3.3.2 Learning by doing

Successful implementation of the investment strategy hinges on designing projects that accelerate the transfer of road safety knowledge to participants, strengthen the capacity of participating partners and stakeholders, and rapidly produce results that provide benchmark measures to dimension a roll-out program. The focus of these guidelines is on the preparation of projects that implement the establishment phase of the investment strategy and build the institutional capacity and evidence base to roll out a large program of initiatives in the investment strategy's growth phase.

Figure 3: Targeting the network

Accelerating the transfer of knowledge and strengthening capacity must be grounded in practice by a learning by doing process that is backed with sufficient targeted investment to overcome the barriers presented by evident weaknesses at the global, regional and country levels. This approach is exemplified by the World Bank's shift to *Safe System* road safety projects which aim to anchor country capacity building efforts in systematic, measurable and accountable investment programs (Bliss, 2004; World Bank Global Road Safety Facility, 2007).^{4,13} This shift in emphasis has particular relevance to low and middle-income countries, but is also pertinent to high-income countries seeking to break through current good practice performance barriers to make more rapid progress towards achieving the ultimate goal of death and serious injury elimination (Morsink et al, 2005).¹⁶

To produce rapid results projects must target high concentrations of death and injuries in the road network to maximize the scale and of likely benefits and certainty of achieving them. By way of example, Figure 3 illustrates the situation on New Zealand's road network where nearly 90% of the social costs or road crashes are incurred on just 20% of the total network. This highlights the reality that the bulk of deaths and injuries are usually incurred on a small portion of the network and can be targeted accordingly. Similar situations can be found in low and middle-income countries where crash data are available and this finding simply reflects the concentration of traffic on key network corridors and areas where high speeds are experienced.

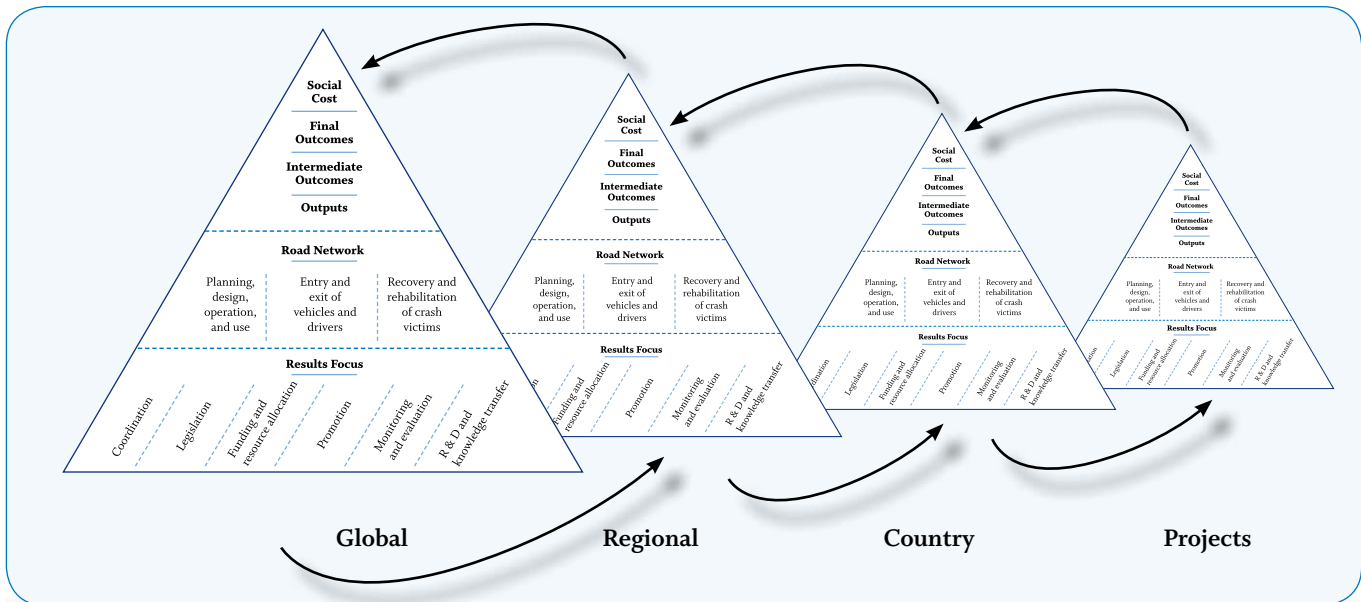
In the absence of quality crash data it is still possible to identify the most dangerous corridors by identifying high traffic volume, high speed corridors, where higher densities of fatal and serious injury crashes can be anticipated. More comprehensive safety rating measures of a road's protective qualities developed by the European Road Assessment Programme and the International Road Assessment Programme (EuroRAP 2005 & 2008; iRAP, 2008)^{17, 18, 19} and related project identification and evaluation tools can also be used to identify high-risk corridors and related investment priorities (see section 4.3.4 (ii)).

Targeting high-risk corridors and areas with specific safety interventions provides the core *Safe System* project component and this should be supplemented with lead agency strengthening and related institutional reform initiatives, national policy reviews if required, and a monitoring and evaluation component. The findings of the country capacity review will help determine the scale and detailed nature of the project.

Key project attributes include government ownership, coverage of all elements of the road safety management system, adequate funding, agency accountability for results, and active promotion of the project by participating agencies with a sustained commitment to achieving its objectives and its extension beyond the first phase.

Guidelines to assist the preparation of *Safe System* projects are provided in section 4.3.

Figure 4: Building global, regional, and country road safety management



3.4 Building global, regional and country capacity

Implementing the recommendations of the *World Report* requires capacity building at the global, regional and country levels, to create the resources and tools necessary to target initiatives on a scale capable of reducing significantly and sustainably the global health losses arising from escalating road deaths and injuries.

Global and regional safety management systems can be viewed in functional terms as being analogous to the road safety management system at the country level (as presented in section 3.1), just as well-designed projects within countries can be viewed as addressing all elements of the road safety management system in a microcosm. Figure 4 depicts the capacity building relationships at the global, regional, country and program and projects levels. Global and regional support and services flows to countries which in turn are deployed in programs at projects at the national and sub-national levels. Reciprocally improved program and project performance contributes to country, regional and global results.

Global and regional safety management capacity displays similar weaknesses to those evident in low and middle-income countries. In particular, with the exception of some regional target-setting initiatives there is an absence of a clear results focus and global and regional institutional responsibilities and accountabilities lack specification. In 2004 the UN General Assembly Resolution 56/289 assigned the World Health Organization the role of coordinating the road safety activities of UN agencies (see Annex 1) and this has resulted in the formation of the UN Global Road Safety Collaboration which has made progress on the advocacy front and is currently reviewing its coordination role. The World Bank Global Road Safety Facility has been established to strengthen global, regional and country safety management capacity and it is achieving success in addressing all elements of the road safety management system at these respective levels (World Bank, 2007).¹³ However, its activities will require scaling up to be fully effective, as recommended by the Commission for Global Road Safety (Commission for Global Road Safety, 2006)²⁰ and the call for increased Facility funding support from the United Nations General Assembly Resolution 62/244 adopted on 31 March 2008 (see Annex 1). Overall, with the exception of efforts being made to harmonize global vehicle standards and conventions concerning road signs and markings, and the emergence of vehicle safety and road infrastructure rating tools, global and regional interventions at the country level are still small scale and built on an institutional base that requires considerable strengthening. In this regard the recent initiatives by the World Bank and regional development banks to harmonize their infrastructure safety policies and practices are promising.

3.5 An integrated implementation framework

The following guidelines provide an integrated framework for the implementation of the *World Report* recommendations. The emphasis is placed on strengthening the institutional functions that underpin effective road safety management systems.

Countries wishing to improve their road safety performance must be well organized to manage the achievement of improved results in a systematic way. Institutional management functions must take the highest priority, as they are the foundation on which road safety management systems are built: they produce the interventions which achieve the desired results. In practice the process of institutional strengthening must be staged. During the formative stages the emphasis must be put on improving the focus on results and related inter-agency coordination. As these institutional management functions become more effective the remaining management functions are in turn strengthened. Eventually the road safety management system operates in a continuous improvement mode, driven to ever-higher levels of road safety performance by the findings of its monitoring and evaluation and research and development and knowledge transfer functions.

The *World Report* highlights the fundamental role of the lead agency in ensuring the effective and efficient functioning of the road safety management system. Responsible and accountable road safety leadership at country, state, provincial and city levels is vital to success. In the absence of such leadership efforts aimed at improving, for example, program coordination, decentralization and promotion will often be illusory and unsustainable. Likewise, 'action plans' prepared without a designated agency mandated to lead their implementation and a realistic and sustainable funding base are likely to remain paper plans and make no positive impact on results (see Box 5). Hence these guidelines address as a priority the first recommendation of the *World Report* which calls for the establishment of a lead agency to guide the national road safety effort, within a framework that integrates the five other recommendations (see section 2).

Box 5: Investment and institutional capacity

Sustained long-term investment is the key to improving country road safety results and these guidelines set out a staged process to investment that addresses revealed capacity weaknesses by first building a core capacity to bring targeted safety outcomes under control, then scaling up investment to accelerate this capacity strengthening and achievement of improved results across the national road network. This must be grounded in practice by a learning by doing process backed with sufficient targeted investment to overcome the barriers presented by weak institutional capacity. An example of this approach is provided by the World Bank's shift to *Safe System* road safety projects which aim to anchor country capacity building efforts in systematic, measurable and accountable investment programs that simultaneously build management capacity while achieving rapid improvements in safety performance in targeted high-risk corridors and areas (see Box 6, Section 4.3). An analogous approach can be found in the recent large scale, evidence based reform of the Mexican health sector, where it was recognized that a key requirement was to bridge the divide between implementing good practice interventions and strengthening the institutional capacity to deliver them. Success was achieved by designing an investment strategy where targeted intervention priorities achieving measurable results were used to drive the health system's institutional reforms and strengthen its overall structure and functions (Frenk, 2007).²¹

These guidelines place their emphasis on the requirements of low and middle-income countries, because the performance gap between the safety rich and the safety poor is widening and urgent action is required to close it. Case studies of the institutional arrangements in a selection of good practice high-income countries are presented in Annexes 2 - 4 to provide institutional benchmarks for low and middle-income countries seeking to implement the *World Report* recommendations. The situation in two middle-income countries where progress in managing road safety is being made is also summarized as it exemplifies what can be achieved once countries commit to achieving more ambitious results.

It is acknowledged that the institutional arrangements in high-income countries are complex and every effort has been made in these guidelines to simplify their presentation. The institutional management functions described in section 3.1.1 are generic and relate to all countries, irrespective of their development status or road safety performance. Form follows function and the emphasis in the case studies has been placed on identifying the various institutional forms that lead agencies can take to address the identified institutional management functions. The complexity of institutional arrangements in high-income countries can be viewed as a surrogate indicator of success and commitment to sustained road safety investment. For low and middle-income countries seeking to successfully and rapidly go down this development path the guidelines provide an integrated framework to commence the process, whereas for high-income countries they can be used to guide ongoing reforms.

References

- ¹ Land Transport Safety Authority (2000), *Road Safety Strategy 2010: A Consultation Document*. National Road Safety Committee, Land Transport Safety Authority, Wellington.
- ² Wegman F (2001). *Transport safety performance indicators*. Brussels, European Transport Safety Council.
- ³ Koornstra M et al (2002). *SUNflower: a comparative study of the development of road safety in Sweden, the United Kingdom, and the Netherlands*. SWOV, Dutch Institute for Road Safety Research, Leidschendam.
- ⁴ Bliss T (2004). *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention*, Transport Note No. TN-1, World Bank, Washington DC.
- ⁵ Trinca G, Johnston I, Campbell B, Haight F, Knight P, Mackay M, McLean J, Petrucelli E (1988) *Reducing Traffic Injury the Global Challenge*, Royal Australasian College of Surgeons.
- ⁶ Rumar, K (1999). *Transport safety visions, targets and strategies: beyond 2000*. 1st European Transport Safety Lecture. European Transport Safety Council, Brussels. <http://www.etsc.be/documents/etsl1.pdf>
- ⁷ Haddon Jr W (1968). *The changing approach to the epidemiology, prevention, and amelioration of trauma: the transition to approaches etiologically rather than descriptively*. American Journal of Public Health, 58:1431–1438. 33. Henderson M. Science and society.
- ⁸ Eds. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C (2004). *World Report on Road Traffic Injury Prevention*, World Health Organization, Geneva.
- ⁹ Wegman F, Aarts L (2006). *Advancing Sustainable Safety*, Leidschendam, SWOV, Dutch Institute for Road Safety Research, Leidschendam.
- ¹⁰ Wegman F, Elsenaar P (1997). *Sustainable solutions to improve road safety in the Netherlands*. SWOV, Dutch Institute for Road Safety Research, Leidschendam.
- ¹¹ Tingvall C (1995). *The Zero Vision*. In: van Holst H, Nygren A, Thord R, eds. *Transportation, traffic safety and health: the new mobility. Proceedings of the 1st International Conference*, Gothenburg, Sweden Berlin, Springer-Verlag.
- ¹² The Committee of Inquiry into Road Traffic Responsibility, (1999). Stockholm, Sweden.
- ¹³ World Bank Global Road Safety Facility (2007). *Strategic Plan 2006 – 2015*. The World Bank, Washington DC.
- ¹⁴ Breen, J, Howard E, Bliss T (2008). *Independent Review of Road Safety in Sweden*, Jeanne Breen Consulting, Eric Howard and Associates, and the World Bank.
- ¹⁵ Mulder J, Wegman F (1999). *A trail to a safer country. Conceptual approaches to road safety policy*, SWOV, Dutch Institute for Road Safety Research, Leidschendam.
- ¹⁶ Morsink P, Oppe S, Reurings M, Wegman F (2005). *SUNflower+6: Development and application of a footprint methodology for the SUNflower+6 countries*, SWOV, Dutch Institute for Road Safety Research, Leidschendam.
- ¹⁷ European Road Assessment Programme (2005). *From Arctic to Mediterranean, First Pan-European Progress Report*, Basingstoke, United Kingdom.
- ¹⁸ European Road Assessment Programme (2008). *Making Europe's Roads Safer: EuroRAP 2007-2009 Initiatives*, Basingstoke, United Kingdom
- ¹⁹ International Road Assessment Programme (2007). *Getting Organized to Make Roads Safe*, Basingstoke, United Kingdom
- ²⁰ Commission for Global Road Safety (2006). *Make Roads Safe. A New Priority for Sustainable Development*, Commission for Global Road Safety, London.
- ²¹ Frenk, J (2007). *Interactions with International Health Institutions: A Developing Country Perspective*, Global Health Network Global Economic Governance Program, University of Oxford, Oxford, United Kingdom.

4

Country Implementation Guidelines

At the country level implementing the recommendations of the *World Report* requires an integrated framework that treats them as a totality and ensures that institutional strengthening initiatives are properly sequenced and adjusted to the absorptive and learning capacity of the country concerned. Emerging global and regional initiatives aiming to assist the acceleration of knowledge transfer to low and middle-income countries and the scaling up of their road safety investments must also be harmonized and opportunities taken to combine and leverage the effective weight of resources being mobilized to improve the results being achieved.

These guidelines present a pragmatic approach designed to overcome the institutional capacity barriers impeding the effective implementation of the *World Report* recommendations, with the focus being on sustainably improving country road safety performance. They provide a framework for effective action and are a revised and expanded version of the guidelines presented in the World Bank Transport Note TN1, *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention*, which was first issued in April 2004 (Bliss, 2004).¹ Their revision has taken account of the World Bank experience gained in trialing and evaluating their implementation in a range of countries (Wegman, Snoeren; 2005; Lawrence; 2006; Howard and Breen, 2006 – 2008).^{2, 3, 4}

4.1 Implementation stages

Figure 5 illustrates the key steps in a staged, iterative implementation process.

Stage 1: Conduct country capacity review (*World Report* recommendation 2).

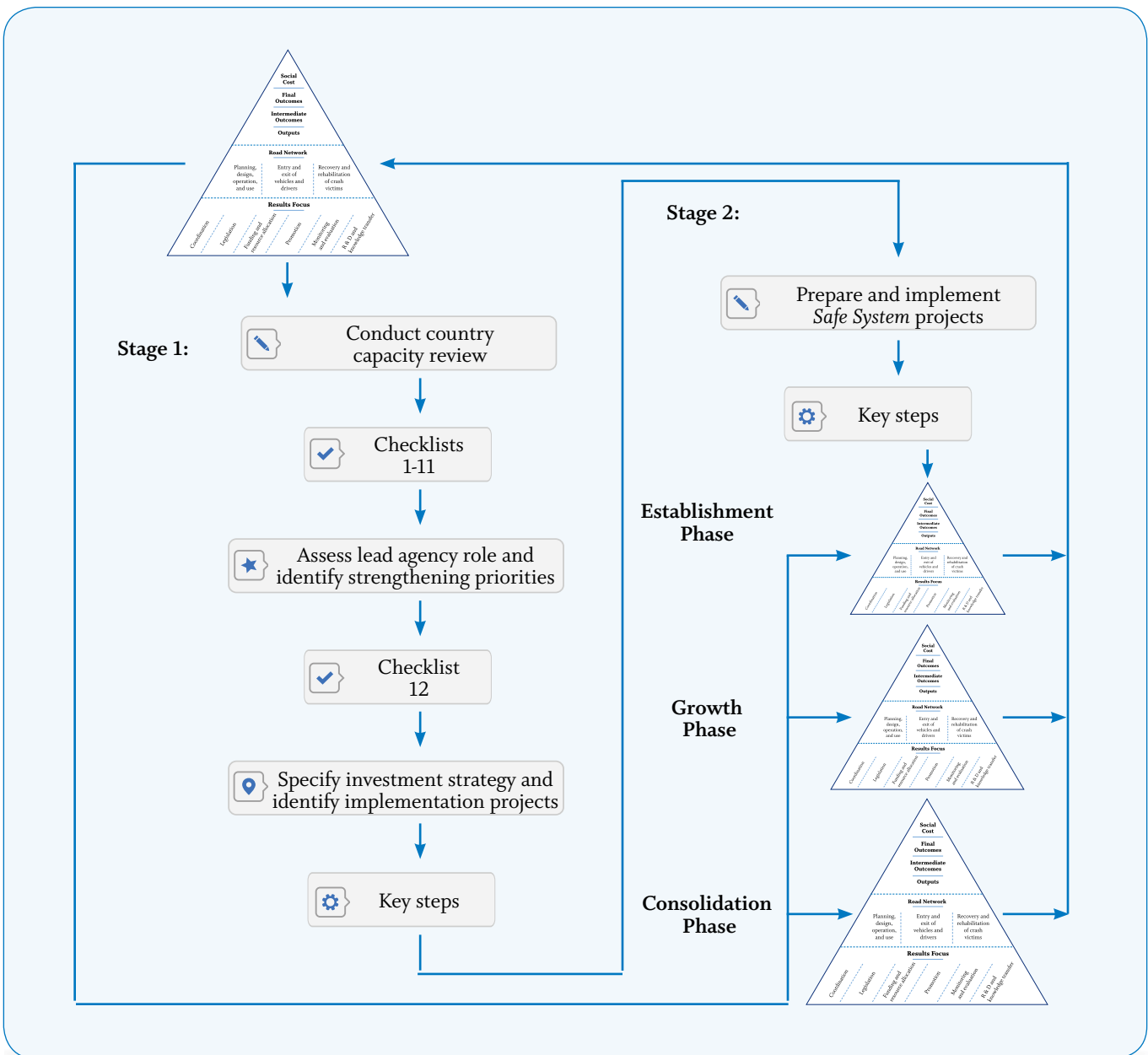
- Assess lead agency role (*World Report* recommendation 1).
- Specify investment strategy and identify projects to launch strategy (*World Report* recommendations 3 & 4)

Stage 2: Prepare and implement *Safe System* projects (World Report recommendations 5 & 6)

This two-stage process culminates in the preparation and implementation of projects designed to launch the investment strategy and to establish core safety management capacity and generate quick results in selected high loss sections of the road network.

Projects in the *establishment* phase generate the institutional capacity and performance benchmarks required to dimension a roll-out program for the *growth* phase of institutional capacity building. This second accelerated phase of investment aims to create sufficient capacity to sustain the third *consolidation* phase of investment required to bring safety outcomes fully under control in accordance with the desired longer-term focus on results (see Figure 2).

Figure 5: Phases of investment strategy



4.2 Stage 1: Conduct country capacity review

Assessing and strengthening country road safety management capacity is critical to the successful implementation of the *World Report* recommendations. Country capacity weaknesses present a formidable barrier to success and the central issue is how to accelerate the necessary process of shifting from weak to strong institutional management capacity to govern the production of improved road safety results. Account must be taken of existing institutional management arrangements and a staged process developed to ensure that institutional strengthening initiatives are properly sequenced and adjusted to the absorptive and learning capacity of the country concerned.

The conduct of a capacity review is a vital stage in the process of a country taking the necessary actions to tailor the *World Report* recommendations to its unique circumstances and to determine its state of readiness to commit the sustainable reforms and measures necessary to bring its road safety outcomes under control.

A country capacity review is conducted through nine distinctive steps:

1. Set review objectives
2. Prepare for review
3. Appraise results focus at system level
4. Appraise results focus at interventions level
5. Appraise results focus at institutional management functions level
6. Assess lead agency role and identify capacity strengthening priorities
7. Specify investment strategy and identify *Safe System* implementation projects
8. Confirm review findings at high-level workshop
9. Finalize review report

The following guidelines cover each of these steps.

4.2.1 Set review objectives

Generic objectives of a country road safety management capacity review are to:

- Set out an integrated multisectoral framework for dialogue with country partners and stakeholders on potential road safety investments.
- Assess government ownership of safety results and identify related institutional responsibilities and accountabilities.
- Reach official consensus on road safety management capacity weaknesses and institutional strengthening and investment priorities to overcome them.
- Identify *Safe System* implementation projects to launch the investment strategy.

Specific terms of reference can be prepared to address these objectives in accordance with the capacity review procedures provided in these guidelines.

4.2.2 Prepare for review

Careful preparation for a country road safety management review is critically important to its ultimate success. Key requirements include:

(i) *High-level management commitment*

High-level country commitment to the review must be guaranteed, otherwise the review objectives cannot be achieved. The review should receive appropriate Ministerial and agency heads' endorsement and their agreement to fully engage in the process and provide the necessary support required to ensure its success.

(ii) *Composition of review team*

The review must be conducted by experienced, internationally recognized road safety experts with senior management experience at country and international levels. Expertise in particular aspects of the road safety management system will be important, but the most critical requirement is high-level experience with the overall strategic management and direction of national road safety programs. These skills are hard to source but they are vitally important to ensure that credible dialogue is achieved at the levels required to quickly achieve official consensus on the way ahead.

Experience has shown that a small review team can be effective and it recommended that the core team be kept to a maximum of two senior road safety managers, to keep dialogue with country clients focused and efficient.

(iii) *Pre-review inception report*

It is essential that an inception report be prepared by the client country, prior to the review being conducted, to set out the basic elements of the road safety management system as defined and provide available data on road safety results and trends. This allows the review to get off to a quick start and avoids dissipating important resources in the collection of basic data and background institutional information that can be more efficiently prepared and provided by the client country. It also allows the review team to prepare in advance and sharpen the focus of their investigations. The inception report should be prepared in an executive summary form and compile all relevant information that is readily available in accordance with capacity review checklists.

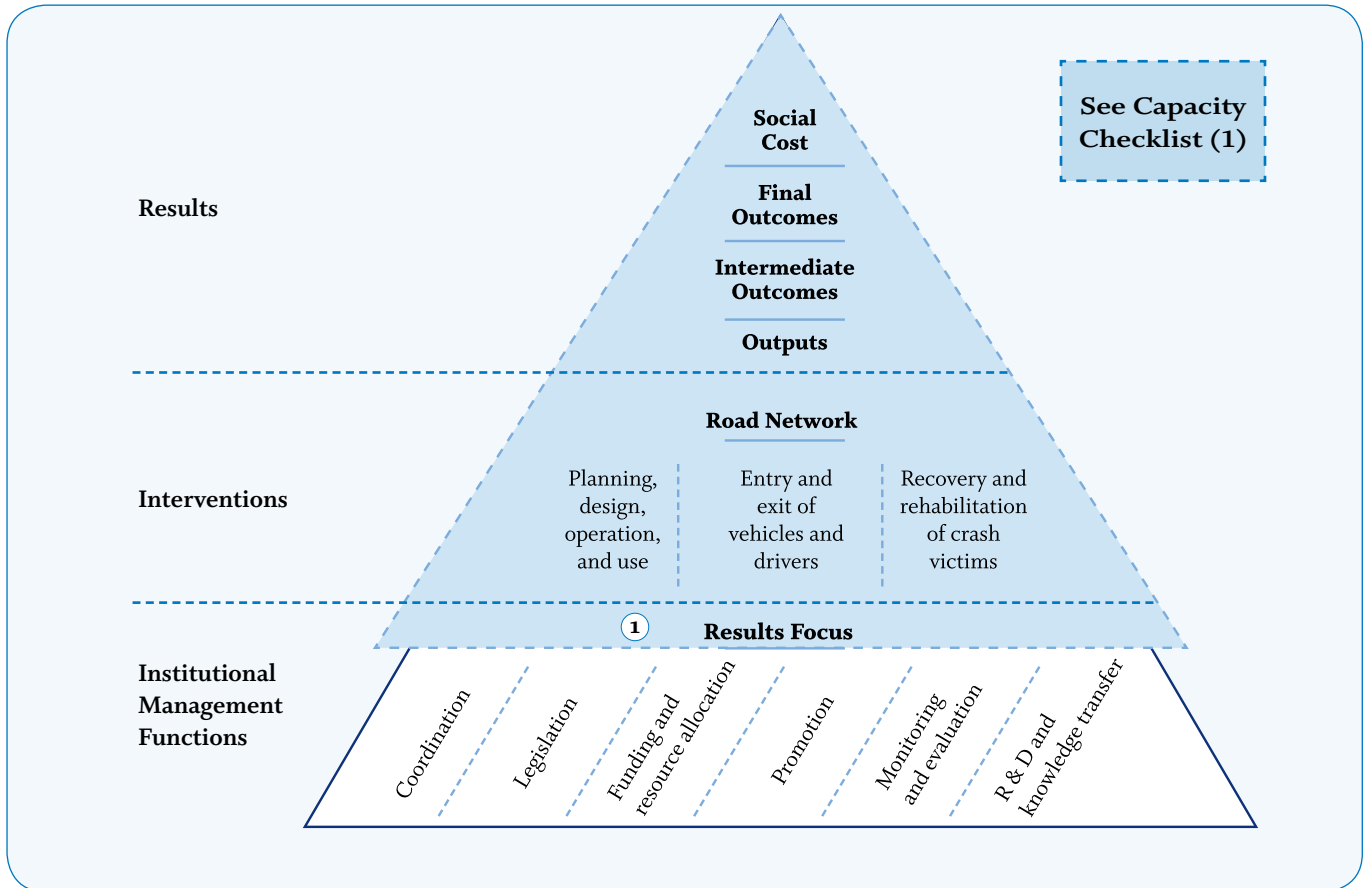
(iv) *Consultation schedule*

A detailed consultation schedule should be prepared in advance and this should be tightly managed locally to ensure a smooth flow of meetings and reschedule them where necessary if availability of key officials and others changes. Access to relevant Ministers and Deputy Ministers and top ranking officials must be secured and given high priority. Ideally these meetings should be scheduled for the commencement and completion of the review, to ensure that the review team can gain an appreciation of national concerns and issues and are able to carry these into their review activities and finally report back on them. Transportation and high quality interpreting services and other office amenities should be provided to support the work of the review team.

4.2.3 Appraise results focus at system level

The road safety management system outlined in section 3.1 provides the framework for the conduct of a country safety management capacity review. Figure 6 highlights the appraisal of safety management capacity in terms of its results focus at the system level. The following Checklist 1 sets out this level of appraisal aggregated across the three categories of intervention.

Figure 6: Appraise results focus at system level



Checklist 1 should be systematically applied and it provides the basis to further explore all relevant issues in more detail using Checklists 2 – 12. Detailed questions are not supplied for this first phase of analysis and the reviewers must use their knowledge and experience to probe issues in depth. For example, in questioning various sources of road safety performance data it will be important to explore issues such as the methods of collection, the quality assurance measures taken, and the fatal and injury crash reporting rates. These issues can be investigated in more depth in subsequent steps.

Checklist 1: Results focus at system level

Questions	Yes	Partial	Pending	No
Are estimates of the social costs of crashes available?				
Are data on road deaths and injuries readily available?				
Have the risks faced by road users been identified? <ul style="list-style-type: none"> • Drivers? • Passengers? • Motorcyclists? • Pedestrians? • Cyclists? • Children? • Others? 				
Has a national vision for improved road safety performance in the longer-term been officially set?				
Have national and regional targets been set for improved safety performance? <ul style="list-style-type: none"> • Social cost targets? • Final outcomes targets? • Intermediate outcomes targets? • Intervention output targets? • At risk group targets? • Industry targets? • Other targets? 				
Have all agencies responsible for improved safety performance been identified and are they formally held to account for performance achieved to achieve the desired focus on results? <ul style="list-style-type: none"> • Highways? • Police? • Transport? • Planning? • Justice? • Health? • Education? • Others? 				
Have industry, community and business responsibilities for improved roads safety performance been clearly defined to achieve the desired focus on results?				
Are regular performance reviews conducted to assess progress and make improvements to achieve the desired focus on results?				
Has a lead agency been formally established to direct the national road safety effort to achieve the desired focus on results?				
Is the lead agency role defined in legislation and/or policy documents and annual performance agreements to achieve the desired focus on results?				

Notes

It is important to probe the risks faced by different road user groups, assisted by available data from highway agencies, police, hospitals and other sources. It is also important to locate and rank those sections of the road network with the highest concentrations of deaths and injuries, across the hierarchy of urban roads and the hierarchy of inter-urban roads. Where data are deficient or simply unavailable extensive consultations with relevant groups may be required to identify user groups most at risk and to locate hazardous sections of the network. The best starting point for these discussions is within the health sector, particularly with the emergency services staff that attend to crash victims in the pre-hospital phase.

The issue of acceptable and achievable levels of safety and related responsibilities and accountabilities must be addressed at the highest agency and ministerial levels, especially across the Transport and Health sectors. In this dialogue it is important to identify the scale of the national health loss incurred by road crashes, compared to other causes of death and injury in the country concerned.

Following appraisal of results focus at the system level, capacity must then be assessed in terms of the country's results focus at the level of interventions, institutional management functions, and lead agency role, using the following Checklists 2 – 12. Ultimately the central issue to be addressed is how to accelerate the process of shifting from weak to strong institutional management capacity to govern the production of desired road safety results.

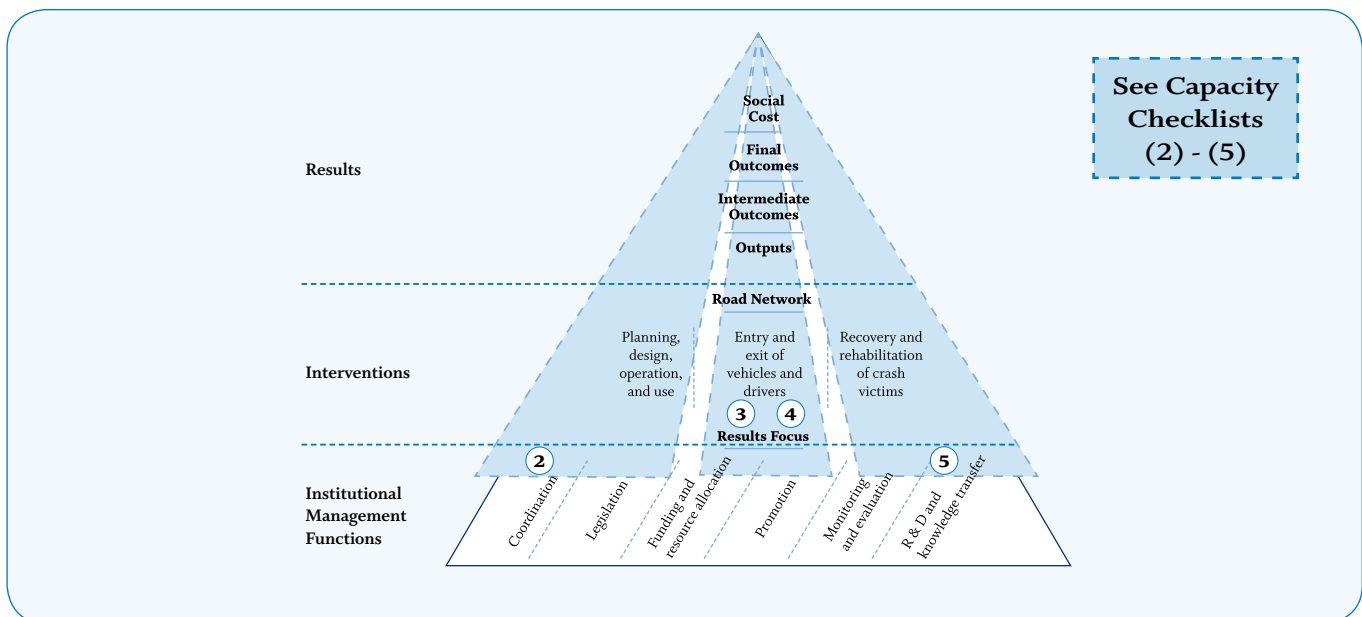
Checklist findings must be interpreted using expert safety management judgment. If the answers to questions are mainly 'no' or 'pending', country capacity is clearly weak. With a high number of 'pending' or 'partial' situations, again capacity is weak, but signs of capacity strengthening are evident and should be acknowledged and encouraged. It is only when there is a predominance of 'yes' answers that capacity can be viewed as strong. It will be important to seek consensus on the assessment made for any particular element of the road safety management system being appraised. In workshop contexts this could take the form of generating a group scorecard to reflect received professional opinion in the country concerned (see section 4.2.8). Note that an electronic checklist system to record reviewer responses is currently under development. This allows for the ready creation of scorecards and to improve the ranking of capacity the pilot version has extended the 'partial' response to low, medium and high degrees of partiality.

4.2.4 Appraise results focus at interventions level

Figure 7 highlights the phase of the capacity review process which appraises safety management capacity in terms of its results focus at the interventions level. The following Checklists 2 – 5 sets out this level of appraisal across each of the three categories of intervention (see Box 3 in section 3.1.2).

Interventions address the safe planning, design, operation and use of the road network; the conditions under which vehicles and road users can safely use it; and the safe recovery and rehabilitation of crash victims; and they set specific standards and rules for this safety and aim to secure compliance with them.

Figure 7: Appraise results focus at intervention level



It is important to work through the three broad categories of intervention and explore the linkages between the identified interventions and their outputs and their intended intermediate outcomes and final outcomes. This is one of the weaknesses of many national road safety action plans, in that they do not logically track through and quantify how prescribed interventions will contribute to improved results. The checklist questions provide for this level of analysis and should be carefully followed.

Checklist 2: Planning, design, operation and use of the road network

Questions	Yes	Partial	Pending	No
Have comprehensive safety standards and rules and associated performance targets been set for the planning, design, operation and use of roads to achieve the desired focus on results? <ul style="list-style-type: none"> • National roads? • Provincial roads? • Regional roads? • City roads? 				
Are the official speed limits aligned with <i>Safe System</i> design principles to achieve the desired focus on results? <ul style="list-style-type: none"> • National roads? • Provincial roads? • Regional roads? • City roads? 				
For each category of roads (national, regional, provincial, city) are compliance regimes in place to ensure adherence to specified safety standards and rules to achieve the desired focus on results? <ul style="list-style-type: none"> • Road safety impact assessment? • Road safety audit? • Road safety inspection? • Black spot management? • Network safety management? • Speed management? • Alcohol management? • Safety belts management? • Helmets management? • Fatigue management? 				
Do the specified safety standards and rules and related compliance regimes clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?				
Do the specified safety standards and rules and related compliance regimes compare favorably with international good practice?				

Notes

Each country will have its own defined road hierarchy and the road categories assessed must be adjusted to this. The checklist is indicative of the network coverage required.

Close attention should be paid to the safety standards that are set for road network design and the extent to which they are clearly defined within a hierarchy of roads and respond to identified road user risks.

It is also important to review if safety audits are conducted to ensure compliance with these standards and if network surveys and inspections are regularly carried out for safety maintenance and hazard identification purposes.

Police enforcement of safety standards and rules must be carefully examined. Particular attention should be paid to police operational practices targeting unsafe behaviors like speeding, drink-driving and the non-wearing of safety belts and helmets.

Likewise, police enforcement of the safety of commercial transport operations – both freight and passenger – must be reviewed.

It is most important to assess if the overall scale of police enforcement initiatives are sufficient to ensure effective compliance. Experience in good practice jurisdictions indicates that about 20 percent of total police budgets are dedicated to strategic road policing activities, with the emphasis being on general deterrence operations.

The extent to which road user education and awareness campaigns are designed to support police enforcement initiatives should also be appraised.

Checklist 3: Entry and exit of vehicles to and from the road network

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set to govern the entry and exit of vehicles and related safety equipment to and from the road network to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Private vehicles? • Commercial vehicles? • Public transport vehicles? • Motor cycle helmets? • Cycle helmets? 				
<p>For each category of vehicles and safety equipment (private, commercial, public, helmets) are compliance regimes in place to ensure adherence to the specified safety standards and rules to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Vehicle certification? • Vehicle inspection? • Helmet certification? 				
<p>Do the specified safety standards and rules and related compliance regimes and safety rating surveys clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?</p>				
<p>Do the specified safety standards and rules and related compliance regimes and safety rating surveys compare favorably with international good practice?</p>				

Notes

In the case of entry and exit controls, safety standards and related compliance regimes for vehicles and road users should be thoroughly appraised. Vehicle safety standards are important for vehicle users and vulnerable road users. Procedures for ensuring compliance with them, as a prerequisite for entry to the vehicle fleet, should be reviewed. These standards can relate to active safety features (e.g. electronic stability control, lighting and conspicuity) and passive safety features (e.g. side and frontal impact protection; pedestrian, cyclist and motorcyclist protection; and safety belts). Standards promulgated by the world's leading vehicle safety jurisdictions – USA, Japan and Europe – provide a useful benchmark for assessing country policies. Safety ratings of new car performance in crash tests provide a useful reference point for assessing country fleet quality.

Checklist 4: Entry and exit of road users to and from the road network

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set to govern the entry and exit of road users to and from the road network to achieve the desired focus on results?</p> <p>Private drivers and passengers?</p> <ul style="list-style-type: none"> • Cars? • Heavy vehicles? • Mopeds? • Motor cycles <p>Commercial drivers?</p> <p>Public transport drivers?</p> <ul style="list-style-type: none"> • Taxis? • Buses? • Non-motorized vehicles? 				
<p>For each category of driver (private, commercial, public) are compliance regimes in place to ensure adherence to the specified safety standards and rules to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Driver testing? • Roadside checks? 				
<p>Do the specified safety standards and rules and related compliance regimes clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Young drivers? • Older drivers? • Commercial drivers? • Public transport drivers? 				
<p>Do the specified safety standards and rules and related compliance regimes compare favorably with international good practice?</p>				

Note

The extent to which driver licensing standards take account of the higher crash risks of novice drivers and older drivers should also be reviewed.

Checklist 5: Recovery and rehabilitation of crash victims from the road network

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set to govern the recovery and rehabilitation of crash victims from the road network to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Pre-hospital? • Hospital? • Long-term care? 				
<p>For each category of post-crash service (pre-hospital, hospital, and long-term care) are compliance regimes in place to ensure adherence to the specified safety standards and rules to achieve the desired focus on results?</p>				
<p>Do the specified safety standards and rules and related compliance regimes clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?</p>				

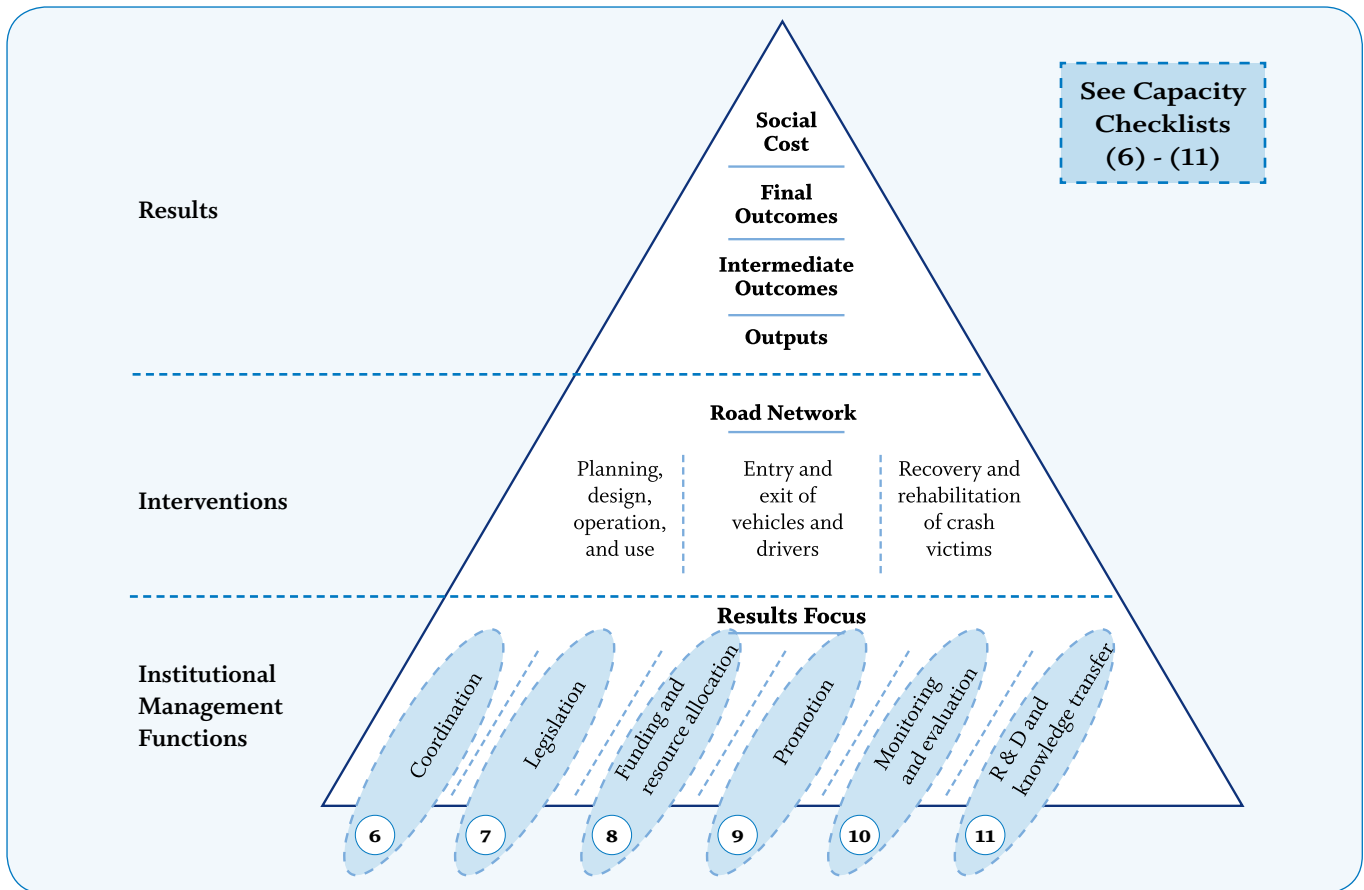
Note

Post-crash services merit close attention, especially in low and middle-income countries where safety performance is poor and high benefit-cost returns can be anticipated from improved emergency and rehabilitation services.

4.2.5 Appraise results focus at institutional management functions level

Figure 8 highlights the phase of the capacity review process which appraises safety management capacity in terms of its results focus at the subordinate institutional management functions level. The following Checklists 6 – 11 set out this level of appraisal which addresses the crucial contribution of the institutional management functions subordinate to the desired focus on results, as described in section 3.1 and examined in depth in Annex 2.

Figure 8: Appraise results focus at institutional management functions level



It is important to work through each institutional management function and explore its linkages with the identified interventions and their desired focus on results. The checklist questions provide for this level of analysis and should be carefully followed.

Checklist 6: Coordination

Questions	Yes	Partial	Pending	No
Are interventions being coordinated horizontally across agencies to achieve the desired focus on results?				
Are interventions being coordinated vertically between national, regional, provincial and city agencies to achieve the desired focus on results?				
Have robust intervention delivery partnerships between agencies, industry, communities and the business sector been established to achieve the desired focus on results?				
Have Parliamentary committees and procedures supporting the coordination process been established to achieve the desired focus on results?				

Note

National coordinating bodies may exist; but unless their membership includes agencies that are fully accountable and funded for road safety results, experience suggests they will be ineffective. More specifically, in good practice countries these coordinating bodies are usually the extension of accountable lead agencies that own and use them as platforms for mobilizing resources and coordinating and focusing multi-sectoral partnerships, in pursuit of agreed results.

Checklist 7: Legislation

Questions	Yes	Partial	Pending	No
Are legislative instruments and procedures supporting interventions and institutional management functions sufficient to achieve the desired focus on results?				
Are legislative instruments and procedures supporting interventions and institutional management functions regularly reviewed and reformed to achieve the desired focus on results?				

Note

Specialist skills will most likely be required to review road safety legislation. This will depend on the complexities of the legal codes and the extent to which they have been structured or restructured to consolidate previous legislation. Road safety legislation typically addresses road, vehicle and user safety standards and rules—and related compliance—but it has often evolved over time, without adequate cross-referencing.

Checklist 8: Funding and resource allocation

Questions	Yes	Partial	Pending	No
Are sustainable funding mechanisms supporting interventions and institutional management functions in place to achieve the desired focus on results? <ul style="list-style-type: none"> • Central budget? • Road fund? • Fees? • Other sources? 				
Are formal resource allocation procedures supporting interventions and institutional management functions in place to achieve the desired focus on results? <ul style="list-style-type: none"> • Cost effectiveness? • Cost benefit? 				
Is there an official Value of Statistical Life and related value for injuries to guide resource allocation decisions?				
Are funding mechanisms and resource allocation procedures supporting interventions and institutional management functions sufficient to achieve the desired focus on results?				

Note

Identifying and quantifying total funding allocated to agencies for road safety can be difficult, particularly when it is embedded in broader sector budgets. However, it is important to seek high-level confirmation of budget sources, processes and levels.

Checklist 9: Promotion

Questions	Yes	Partial	Pending	No
Is road safety regularly promoted to achieve the desired focus on results? <ul style="list-style-type: none"> • Overall vision and goals? • Specific interventions? • Specific target groups? 				

Checklist 10: Monitoring and evaluation

Questions	Yes	Partial	Pending	No
For each category of roads (national, regional, provincial, city) are sustainable systems in place to collect and manage data on road crashes, fatality and injury outcomes, and all related road environment/vehicle/road user factors to achieve the desired focus on results?				
For each category of roads (national, regional, provincial, city) are sustainable systems in place to collect and manage data on road network traffic, vehicle speeds, safety belt and helmet wearing rates to achieve the desired focus on results?				
For each category of roads (national, regional, provincial, city) are regular safety rating surveys undertaken to quality assure adherence to specified safety standards and rules, to achieve the desired focus on results? <ul style="list-style-type: none"> • Risk ratings? • Road protection scores? 				
For each category of roads (national, regional, provincial, city) are systems in place to collect and manage data on the output quantities and qualities of safety interventions implemented to achieve the desired focus on results? <ul style="list-style-type: none"> • Safety engineering treatments? • Police operations? • Educational activities? • Promotional activities? • Driver training? • Vehicle testing? • Emergency medical services? 				
For each category of vehicles and safety equipment (private, commercial, public, helmets) are systematic and regular safety rating surveys undertaken to quality assure adherence to the specified safety standards and rules to achieve the desired focus on results? <ul style="list-style-type: none"> • Vehicle safety rating? • Helmet testing? 				
For each category of post-crash service (pre-hospital, hospital, long-term care) are systematic and regular surveys undertaken to quality assure adherence to the specified standards and rules to achieve the desired focus on result?				
Are systems in place to monitor and evaluate safety performance against targets regularly to achieve the desired focus on results?				
Do all participating agencies and external partners and stakeholders have open access to all data collected?				

Checklist 11: Research and development and knowledge transfer

Questions	Yes	Partial	Pending	No
<p>Has a national road safety research and development strategy been established to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Vehicle factors? • Highway factors? • Human factors? • Institutional factors? • Other factors? 				
<p>Has an independent national road safety research organization been established to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Vehicle factors? • Highway factors? • Human factors? • Institutional factors? • Other factors? 				
<p>Have demonstration and pilot programs been conducted to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Vehicle factors? • Highway factors? • Human factors? • Institutional factors? • Other factors? 				
<p>Are mechanisms and media in place to disseminate the findings of national road safety research and development to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Conferences? • Seminars? • Training? • Journals? • Other? 				

4.2.6 Assess lead agency role and identify capacity strengthening priorities

The first and crucial *World Report* recommendation concerned the identification of a lead agency in government to guide the national road safety effort, with the authority to make decisions, manage resources and coordinate the efforts of all participating sectors of government. The vital lead agency role in directing and sustaining the production of improved road safety results is outlined in section 3.2 and more operational details are provided in Annex 2.

This phase of a country capacity management review requires an assessment of the lead agency role and recommendations for strengthening revealed weaknesses. It is closely related to the procedures and findings of the previous steps covered by Checklists 1 – 11. Checklist 1 presented in section 4.2.3 establishes whether or not a lead agency has been formally established to direct the national road safety effort. It also assesses if its role has been defined in legislation and/or policy documents and annual performance agreements to achieve the desired focus on results. To the extent that answers to these questions are in the affirmative it can be concluded that the country concerned is taking the issue seriously and building a sound platform for sustainable action. However, it cannot be assumed that the absence of a formal lead agency means that the lead agency functions are not being addressed. Informally elements of them may be being delivered and whether this is the case or not must be closely explored.

Country safety management capacity to effectively deliver the lead agency role must be closely assessed and the following Checklist 12 addresses this phase of appraisal. The questions are directly linked to the detailed lead agency role as described in Annex 2 and close reference to this material is advised.

In good practice countries the lead agency (or the informal lead agency/agencies) plays a preeminent role in most institutional management functions as described in section 3.1.1, though sometimes it can adopt more of a guiding, encouraging or catalytic role. The lead agency takes responsibility within government for the development of the national road safety strategy and its results focus, the overarching institutional management function. It also usually takes responsibility for horizontal inter-governmental coordination arrangements; vertical coordination of national, regional and local activity; coordination of the necessary delivery partnerships between government partners and stakeholders, professional, non-governmental and business sectors and Parliamentary groups and committees; ensuring a comprehensive legislative framework; securing sustainable sources of annual funding and creating a rational framework for resource allocation; high-level promotion of road safety strategy across government and society; periodic monitoring and evaluation of road safety performance; and the direction of research and development and knowledge transfer.

Checklist 12: Lead agency role and institutional management functions

Questions	Yes	Partial	Pending	No
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>results focus</i> management function?</p> <ul style="list-style-type: none"> • Appraising current road safety performance through high-level strategic review? • Adopting a far-reaching road safety vision for the longer term? • Analyzing what could be achieved in the medium term? • Setting quantitative targets by mutual consent across the road safety partnership? • Establishing mechanisms to ensure partnership accountability for results? 				
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>coordination</i> management function?</p> <ul style="list-style-type: none"> • Horizontal coordination across central government? • Vertical coordination from central to regional and local levels of government? • Specific delivery partnerships between government, non-government, community and business at the central, regional and local levels? • Parliamentary relations at central, regional and local levels? 				
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>legislation</i> management function?</p> <ul style="list-style-type: none"> • Reviewing the scope of the legislative framework? • Developing legislation needed for the road safety strategy? • Consolidating legislation? • Securing legislative resources for road safety? 				
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>funding and resource allocation</i> management function?</p> <ul style="list-style-type: none"> • Ensuring sustainable funding sources? • Establishing procedures to guide the allocation of resources across safety programs? 				
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>promotion</i> management function?</p> <ul style="list-style-type: none"> • Promotion of a far-reaching road safety vision or goal? • Championing and promotion at high level? • Multisectoral promotion of effective interventions and shared responsibility? • Leading by example with in-house road safety policies? • Developing and supporting safety rating programs and the publication of their results? • Carrying out national advertising? • Encouraging promotion at local level? 				
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>monitoring and evaluation</i> management function?</p> <ul style="list-style-type: none"> • Establishing and supporting data systems to set and monitor final and intermediate outcome and output targets? • Transparent review of the national road safety strategy and its performance? • Making any necessary adjustments to achieve the desired results? 				
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>research and development and knowledge transfer</i> management function?</p> <ul style="list-style-type: none"> • Developing capacity for multi-disciplinary research and knowledge transfer? • Creating a national road safety research strategy and annual program? • Securing sources of sustainable funding for road safety research? • Training and professional exchange? • Establishing good practice guidelines? • Setting up demonstration projects? 				

As previously highlighted in section 4.2.3, checklist findings must be interpreted using expert judgment derived from extensive road safety management experience at the national level. If the answers to questions in Checklists 1 – 12 are mainly ‘no’ or ‘pending’, country capacity is clearly very weak. With a high number of ‘pending’ or ‘partial’ situations, again capacity is weak, but signs of capacity strengthening are evident and should be acknowledged and encouraged. It is only when there is a predominance of ‘yes’ answers that capacity can be viewed as strong.

When specifically assessing lead agency capacity this same interpretive approach should be used and three broad levels of lead agency can be identified, as follows:

(i) *Weak lead agency capacity*

If the answers to the lead agency questions in Checklist 1 are ‘no’, ‘pending’, or ‘partial’, and mostly ‘no’ or ‘pending’ for all of the Checklist 12 questions, it can be said that a country’s lead agency capacity is *weak*.

(ii) *Basic lead agency capacity*

If the answers to the lead agency questions in Checklist 1 are ‘yes’, or ‘yes’ and ‘no’, and mostly ‘pending’ or ‘partial’ for all of the Checklist 12 questions, it can be said that a country’s lead agency capacity is *basic*.

Careful judgment will be required here. It may be reasonable to define a country’s lead agency capacity as ‘basic’, even if the answers to the lead agency questions in Checklist 1 are ‘no’, if it is clear that informally the lead agency role is partially and effectively being delivered. In reality this judgment should be easy enough to make, as the ‘weak’ and ‘advanced’ capacity situations reflect extremes that can be clearly identified, with ‘basic’ falling in between these states.

(iii) *Advanced lead agency capacity*

If the answers to the lead agency questions in Checklist 1 are ‘yes’, and mostly ‘yes’ and ‘partial’ for all of the Checklist 12 questions, it can be said that a country’s lead agency capacity is *advanced*.

It is likely that the findings of the capacity assessment of the lead agency role will mirror those for the country road safety management system as a whole. However, it is possible to envisage a situation where basic lead agency capacity is emerging in the context of weaker country safety management capacity, and hence lead agency capacity is ranked higher than country safety management capacity.

(iv) *Identify lead agency strengthening priorities*

The assessed capacity level can be used to identify lead agency strengthening priorities, as set out in Table 2.

Table 2: Lead agency strengthening priorities

Capacity level	Priority steps
Weak	<ul style="list-style-type: none"> • Designate lead agency • Establish and fully resource small lead agency secretariat • Operationalize coordination groups • Confirm national safety investment strategy • Identify project(s) to launch investment strategy • Implement, monitor and evaluate project(s) • Prepare and approve national rollout program
Basic	<ul style="list-style-type: none"> • Strengthen and refocus secretariat • Strengthen and refocus coordination groups • Upgrade national investment strategy • Prepare quantitative performance targets • Sharpen agency responsibilities and accountabilities
Advanced	<ul style="list-style-type: none"> • Review lead agency functions, forms, structures and processes • Reform and restructure lead agency • Upgrade national investment strategy • Set new, more ambitious performance targets

The findings of the lead agency role assessment will be crucial to determining the priorities and scale of the country investment strategy and related implementation projects, as discussed in sections 4.2.7 and 4.3 below.

It is important that any initiatives designed to improve country road safety performance are centered on the lead agency role and driven from the fundamental objective of strengthening national leadership, in accordance with the priority given to this by the key and overarching *World Report* recommendation. Particular attention should be paid to the leadership required to provide effective program and project management and related inter-agency coordination functions.

The effective delivery of core institutional management *functions* can be achieved with varied lead agency structural and procedural *forms* and there is no preferred model for this that can be identified and promoted. Good practice examples are summarized in Annexes 3 & 4.

4.2.7 Specify investment strategy and identify Safe System implementation projects

This phase of the country capacity review addresses the third and fourth *World Report* recommendations which concern the specification of a long-term investment strategy to accelerate the process of shifting from a weak to high capacity safety management system and related implementation options.

Safety management capacity weaknesses in low and middle-income countries present a formidable barrier to progress and generally institutional management functions require strengthening. Likewise safety management capacity weaknesses can also become evident in high-income countries, as their results focus shifts to even higher levels of ambition. In both these circumstances an investment strategy must be designed to overcome inherent capacity weaknesses by first establishing a core capacity to bring safety outcomes under control, then scaling up investment to accelerate this capacity building across the entire road network, and finally consolidating it on a sustainable basis (see section 3.3.1).

This staged approach to scaling up investment acknowledges the barriers imposed by weak safety management capacity and addresses the challenge of accelerating the necessary process of institutional strengthening required to effectively govern the production of improved road safety results. In effect the long-term investment strategy is implemented by a program of successive projects that build on the results achieved and the management capacity created in the process.

Accelerating the transfer of knowledge and capacity strengthening must be grounded in practice by a learning by doing process backed with sufficient targeted investment to overcome the barriers presented by evident weaknesses at the global, regional and country levels. Successful implementation of the investment strategy hinges on designing projects that accelerate the transfer of road safety knowledge to participants, strengthen the capacity of participating partners and stakeholders, and rapidly produce results that provide benchmark measures to dimension a roll-out program.

(i) Identify funding sources

The focus of these guidelines is on the preparation of *Safe System* projects that implement the establishment phase of the investment strategy and build the institutional capacity and evidence base to roll out a large program of initiatives in the investment strategy's growth phase. This presupposes that sufficient funding is available and potential funding sources must be identified before the investment strategy is specified in any detailed way. In low and middle-income countries financing sources will include the World Bank and other investment banks. In all countries mainstream budgetary, road fund and fee for services processes could play a central role. It is important at the outset to determine the nature of the broad budget envelope and to plan future activities within these parameters. Capacity review findings will help influence the scale of funding available and assist the preparation of business cases for additional funding.

(ii) *Determine sequencing of investments*

Capacity review findings will also influence the sequencing of the long-term investment strategy required to accelerate the process of shifting from a weak to high capacity road safety management system.

For each element of the road safety management system (as described in section 3.1) a pathway from weak to strong capacity can be shaped in accordance with the establishment, growth and consolidation phases of the investment strategy, as described in section 3.3.1 and Figure 3. A generic framework to guide this phased investment process is set out in Table 3.

Target-setting tools will underpin the quantification of a long-term investment strategy and in the absence of high quality road safety data the estimation process will be necessarily crude. The suggested approach is to make strategic estimates of performance targets and investment needs, using available data, and then commence the process of their refinement with tactical investments and related monitoring and evaluation in high-risk demonstration corridors and urban areas. The evaluation findings will then provide an evidence base for the setting of more credible long-term national targets and the refinement of related investment needs.

In setting out a long-term investment strategy it is important to have a vision of where the country concerned aims to be in performance terms by the end of the planning horizon and a clear understanding of how this will be achieved. Such a vision will be shaped by the desire to bring safety results under control on a sustainable basis. The time frame for this must be realistic. For planning purposes it is recommended to consider three successive phases of around five years each covering the establishment, growth and consolidation of the investment strategy. This should be seen as indicative only as some countries may wish to move faster in the establishment phase and where capacity is reasonable and able to be quickly built on this should be encouraged. However, it should be recognized that a 15-year timeframe to bring road safety results under control is ambitious and presents considerable challenges for low and middle-income countries.

In the *establishment* phase it is important to take control of the safety situation in targeted high crash-density corridors and areas to demonstrate what can be achieved and to assemble the evidence base to dimension a roll-out program for the growth phase. It is also important during the establishment phase to undertake more detailed reviews of all areas of revealed capacity weakness and to build the necessary data management systems required to govern the total network. High priority reforms should also be implemented during this phase, especially those that will take time to realize their full benefits, such as improved vehicle safety standards.

In the *growth* phase key priorities are to put in place a robust performance management framework for all participating agencies, to nationally roll-out targeted safety programs systematically across high-risk sections of the road network, and to implement all the findings of intervention benchmarking and policy reviews.

In the *consolidation* phase key priorities are to devolve the performance management framework to regions, provinces and districts and to take all the necessary measures to improve management and operational efficiency and effectiveness and seek opportunities for future safety innovations.

Table 3: Sequencing of investments

System element	Capacity strengthening phase and examples of priority initiatives		
	Establishment	Growth	Consolidation
Results	Set quantitative performance targets for high-risk demonstration corridors and areas	Set quantitative national targets (see Box 4)	Devolve national targets to regions, provinces and districts
Interventions	Implement comprehensive multisectoral measures in targeted high-risk demonstration corridors and urban areas (see Boxes 6 – 9)	Roll-out comprehensive multisectoral measures across remaining high-risk corridors and urban areas of total road network	Sustain comprehensive multisectoral measures across total road network and extend targeting to less risky roads.
	Review and internationally benchmark safety policies and interventions and commence implementation of reforms	Implement ongoing reforms of safety policies and interventions, and introduce new measures in accordance with international good practice	Review and internationally benchmark safety policies and interventions, and implement reforms.
Institutional management functions	Establish lead agency role and functions and related coordination arrangements (see Box 10)	Strengthen and refocus lead agency role and functions and related coordination arrangements	Review and reform lead agency role and functions and related coordination arrangements
	Manage, monitor and evaluate road safety results in high-risk demonstration corridors and areas	Manage, monitor and evaluate road safety results across high-risk corridors and urban areas of total road network	Extend performance monitoring and evaluation of safety results to less risky roads in network.
	Review and internationally benchmark institutional management functions, and commence implementation of reforms	Implement ongoing reforms of institutional management functions	Review and reform institutional management functions
	Commission building or upgrading of national crash analysis system	Disseminate safety performance data from national crash analysis system and ensure open access to system by all partners and stakeholders.	Upgrade national crash analysis system and extend performance monitoring capabilities.

(iii) Identify Safe System projects to implement investment strategy

The focus of these guidelines is on the preparation of projects to implement the establishment phase of the investment strategy and build the institutional capacity and evidence base to roll out a large program of initiatives in the investment strategy's growth phase.

Details of the projects will be determined by the capacity review findings. However, core components should be shaped by the examples provided in Table 3 which highlights the appropriate sequencing of investments through the identified phases required to efficiently and effectively accelerate the process of shifting a country from a weak to a high capacity road safety management system.

Guidelines to assist the specification and preparation of projects are provided in section 4.3 below.

4.2.8 *Confirm review findings at high-level workshop*

A workshop should be planned and scheduled as a formal part of the capacity review process with the objective of confirming and integrating the review findings from Checklists 1 – 12 and addressing any issues that may have remained unresolved or not been identified during the review process.

The workshop should seek to bring all parties together in a multisectoral context that allows all relevant elements of the road safety management system to be addressed in the spirit of a strategic partnership and shared responsibility that seeks to improve road safety results. In this type of workshop setting it would be useful to review and seek confirmation of the review findings and prepare a checklist ‘scorecard’ which reflects the professional consensus view received (see section 4.2.3).

It is important that the workshop complements the broad objectives of the review as set out in section 4.2.1. It should put its main emphasis on exploring the role of the lead agency and the overall dimensions of a country investment strategy for the short, medium and long term, rather than creating expectations among key stakeholders for early the early definition of projects that they may have specific interests in.

(i) Participants

All agencies and other stakeholders and partners consulted during the review process should be represented at the workshop. This representation should be at a senior, decision-making level, to ensure that relevant and binding agreements can be reached on the review findings and issues that may arise.

Every effort should be made to ensure that the actual officials and other representatives consulted during the review process agree to attend the workshop. Representatives replacing them must be fully briefed on the process that has preceded the workshop and the findings and understandings reached.

(ii) Procedures

The workshop should be designed to take the review process forward by corroborating what has been learned during this process and building on this to explore in more depth the institutional strengthening and investment priorities required to overcome identified road safety management capacity weaknesses.

It is important that the workshop be independently chaired, to assure all participants that the process is impartial and focused on the review objectives rather than the interests any single stakeholder or coalition of stakeholders. For example, with past World Bank sponsored reviews it has been effective to have the workshop chaired by a high-level representative of the World Bank Country Office.

(iii) Reach official consensus on review findings

Prior to the workshop a first draft of the review findings should be prepared and a summary made available to participants at the workshop. It is envisaged that key findings would have been discussed with relevant partners and stakeholders prior to the workshop, as part of the process of preparing the draft.

In particular the draft review findings should assess the role of the lead agency and its capacity strengthening, if required, and outline a proposed investment strategy for further consideration and finalization to the extent possible at the workshop.

Every effort must be made at the workshop to reach an official consensus on the details of the review findings and the strategic direction to be taken by the country to improve its road safety results.

In particular it will be important to reach agreement on related institutional responsibilities and accountabilities, especially the lead agency role, and the institutional strengthening and program and project investment priorities to overcome agreed road safety management capacity weaknesses.

4.2.9 Finalize review report

A draft report presenting capacity review findings should be circulated during the last phase of the review to all participants and other relevant parties in the government for comments and approval. A final report can then be prepared and distributed.

4.3 Stage 2: Prepare and implement *Safe System* projects

Following the conduct of the country capacity review the second step in the process is to prepare safety projects to launch the identified investment strategy. Successful implementation hinges on designing projects that accelerate the transfer of road safety knowledge to strengthen the capacity of participating entities and rapidly produce results that provide benchmark measures to dimension a roll-out program.

The focus of these guidelines is on the preparation of projects that implement the *establishment* phase of the investment strategy and build the institutional capacity and evidence base to roll out a larger program of initiatives in the investment strategy's *growth* phase (see previous section 4.2.7 (ii), Table 3). As a general principle projects should have *Safe System* characteristics (see Box 6). They should be designed to cover all elements of the road safety management system, as specified in section 3.1 and Table 3 in section 4.2.7 (ii), and the design should reflect the shift in results focus to the elimination of death and serious injuries, as discussed in section 3.1.4 (iv).

Box 6: Shifting to *Safe System* road safety projects

The guidelines build on the experience gained by the World Bank over the last thirty years in supporting road safety initiatives in low and middle-income countries and draw heavily on the practical lessons learned during this process. In recent years the World Bank has been shifting to *Safe System* road safety projects which aim to anchor country capacity building efforts in systematic, measurable and accountable investment programs that simultaneously build management capacity while achieving rapid improvements in safety performance for all road users.

Past projects were implemented as small components of larger road infrastructure and urban transport projects and were fragmented single sector initiatives with outcomes too small to be measured in any statistically significant way. While they were simple to prepare they were often one-off initiatives with no follow-up activities. *Safe System* projects on the other hand are preferably stand-alone, multisectoral initiatives targeting high-risk corridors and areas, with outcomes large enough to be reliably measured. A crucial feature of these projects is that their management arrangements should model the vital lead agency contribution to directing and sustaining the production of improved road safety results and be designed to maximize the potential for the lead agency to rapidly assert itself in this role and build its capacity accordingly. *Safe System* projects are complex to prepare and represent the first step in a longer program of initiatives designed to roll-out successful elements of the project to the wider road network. They are grounded in practice using a learning by doing process backed with sufficient targeted investment to overcome the barriers presented by weak institutional capacity. It was initially thought that the level of investment required such projects would dictate a need for large stand-alone initiatives, but recent experience suggests that small components of larger road infrastructure and urban transport projects can be effective, providing they are designed to meet *Safe System* project objectives, as presented in these guidelines.

The overall sequencing of the project preparation process is crucial to successful project implementation. The first priority is to prepare a project concept, based on the findings of the country capacity review. This should be sufficiently comprehensive to outline all components, partnerships and targeted results. The second and third priorities are to reach consensus on the project management arrangements and the monitoring and evaluation procedures. The preparation of a detailed project design should only commence once agreement is reached on the overall project concept, the results it is trying to achieve and how these will be managed and measured.

Project preparation is conducted through eight distinctive steps:

1. Set project objectives
2. Determine scale of project investment
3. Identify project partnerships
4. Specify project components
5. Confirm project management arrangements
6. Specify project monitoring and evaluation procedures
7. Prepare detailed project design
8. Highlight project implementation priorities

The following guidelines cover each of these steps.

4.3.1 Set project objectives

For the establishment phase of the investment strategy project concepts should address core objectives. Related objectives can address specific capacity review findings more specifically where appropriate.

(i) Core objectives

Core project objectives can be broadly specified as follows:

- To accelerate the transfer of road safety knowledge to project participants.
- To rapidly strengthen the capacity of the lead agency and participating agencies and stakeholders.
- To achieve quick proven results and obtain benchmark performance measures to dimension a national roll-out program.

(ii) Related objectives

More specific project objectives concerning reforms of institutional management functions and interventions will be shaped by the capacity review findings.

4.3.2 Determine scale of project investment

The project concept should address the scale of the proposed project investment. This will be determined by available sources of funding, but investment should be sufficient to guarantee the achievement of at least the core project objectives.

Capacity review findings will help influence this budget decision, although normally the capacity review would not have been undertaken without first being linked to a funding commitment in principle that offered significant investment opportunities at a scale conducive to sustainable success (see section 4.2.7 (i)).

(i) Stand-alone versus component

Stand-alone road safety projects are preferable as they require more visible and accountable ownership and are more likely to ensure a level of investment that can achieve measurable results on a significant scale.

However, in low and middle-income countries where funding is scarce it is likely that road safety projects will often be components of larger road sector investments or just small stand-alone investments. Recent experience suggests these small projects can be effective providing they are properly designed to deliver on the core project objectives identified in section 4.3.1 (i) which reflect *Safe System* project characteristics (see Box 6).

(ii) Set project budgets

Large-scale stand-alone projects addressing multiple interventions will generally require budgets of at least \$30 million and go as high as \$100 million or more.

Projects on this scale addressing a narrow range of interventions such as systematic safety engineering programs targeting network hazards will also be effective, providing all elements of the safety management system relevant to their delivery are addressed.

Single multisectoral interventions addressing key safety behaviors such as speeding, motor cycle helmets or drink driving, or post-crash pre-hospital services, could be effectively delivered with budgets as low as \$1 – 5 million, providing they are tightly targeted with their resources concentrated on small corridors or areas of the road network to ensure that measurable results can be achieved.

4.3.3 Identify project partnerships

It is important that the project is designed to maximize the opportunities to engage all relevant partners and stakeholders who share an interest in its outcomes and a potential to contribute to improving these. Key examples of possible partners are outlined below.

(i) Global and regional partners

Recommendation six of the *World Report* called for a scaling up of international efforts to build a global and regional partnership focused on strengthening capacity at the country level to deal with the growing road safety crisis and projects should be designed to maximize potential engagement with global and regional partners.

In particular, the FIA Foundation for the Automobile and Society, the Global Road Safety Partnership, the World Bank and the World Health Organization have collaborated to produce a series of good practice manuals to provide guidance to countries wishing to implement interventions recommended by the *World Report*, and potential partnerships with these organizations should be explored (see section 4.3.4 (ii), Improved safety behaviors).

(ii) *Local research centers*

In high-income countries road safety performance has been considerably enhanced by the independent contributions made by local research centers which have helped to guide the design and implementation of national strategies that have sustained reductions in road deaths and injuries (see section 4.3.6 (i)).

Opportunities should be sought to engage local research centers in project preparation and implementation. In particular, the independent conduct of the project monitoring and evaluation activities could be undertaken by a local research center and this would contribute to their in-house capacity building objectives as well as transferring knowledge and skills to participating agencies and building partnerships with them.

(iii) *Community groups and NGOs*

Projects should also be designed to maximize opportunities to engage community groups and NGOs active in the targeted corridors and areas to ensure that their specific contributions can be made and their capabilities further enhanced in the process.

Community groups and NGOs can help intensify community ownership of the project objectives and they are capable of achieving this effectively with relatively low budgets, providing they are well integrated into the project from the outset and can engage meaningfully in its ongoing management and implementation.

(iv) *Private sector*

Likewise projects should be designed to maximize opportunities to engage private sector organizations who are seeking to contribute knowledge and resources to improve road safety outcomes in the communities that they are working in.

Again it is important to find ways to integrate private sector partners into the project from the outset and to ensure their effective engagement in its ongoing management and implementation.

4.3.4 *Specify project components*

The project concept should address three broad components which will require clear identification, based on the findings of the capacity review. These relate to institutional capacity strengthening priorities, targeted interventions in high-risk corridors and areas, and policy reforms where weaknesses have been identified.

(i) *Capacity strengthening priorities*

Lead agency

An essential element of the project concept will be to create a central role for the lead agency that enables it to deliver effectively on its institutional management functions and build and strengthen its leadership and partnership capacity in the process. This role should be tightly defined and operationalized in the project management arrangements, as discussed in section 4.3.5.

It is important that any initiatives designed to improve country road safety performance are centered on the lead agency role and driven from the fundamental objective of strengthening national leadership, in accordance with the priority given to this by the key and overarching *World Report* recommendation.

Particular attention should be paid to the leadership required to provide effective project management and related inter-agency coordination functions.

Other institutional reforms

While the high priority concerns strengthening of the lead agency role, the findings of the capacity review will identify other priorities for institutional reform. Where relevant these can be addressed in the project design.

For example, a related project priority is the establishment of a monitoring and evaluation framework and the specification of baseline and ongoing performance measures and associated programs for their collection, collation and interpretation. Emphasis should also be placed on the development of national crash analysis systems.

Reform of national partnership coordination is also likely to be a high priority and this can be addressed in the project management arrangements (see section 4.3.5 below).

(ii) *High-risk corridors and areas to be targeted*

The project concept should identify the high-risk corridors and areas to be targeted by the project. To produce rapid results the project must target high concentrations of death and injuries in the road network to maximize the scale of likely benefits and certainty of achieving them.

The bulk of road deaths and injuries are usually incurred on a small portion of national and city networks and can be targeted accordingly. This simply reflects the concentration of traffic on key network corridors and areas where high speeds are experienced (see section 3.3.2).

In the absence of quality crash data it is still possible to locate the most dangerous corridors by identifying high traffic volume, high speed corridors, where higher densities of fatal and serious injury crashes are known to occur and can be anticipated.

A summary of interventions that can be considered for implementation in the high-risk corridors and areas is provided in the *World Report* (WHO, 2004).⁵ In accordance with the road safety management framework system discussed in section 3.1, the interventions should address the planning, design, operation and use of the network, and the recovery and rehabilitation of crash victims from the road network. The entry and exit of vehicles and drivers to the road network should be addressed as a policy reform issue (see section 4.3.3 (iii)).

Hence the focus of interventions in the high-risk corridors should be on improving the safety of infrastructure, road user behaviors and post-crash responses.

Infrastructure safety improvements

When crash data is limited traditional black spot elimination approaches to infrastructure safety improvements in high-risk corridors are ill-advised as it is difficult to assess their effectiveness in safety terms.

An improved approach is to identify hazardous locations in terms of the expected number of crashes and using before-and-after statistical analyses of the related infrastructure safety improvements (Elvik, 2007).⁶ Over the last decade traditional black spot management has also been supplemented with a more systematic network analysis, called network safety management. However, both black spot and network safety methods are reactive and depend on several years of reliable crash data which can be difficult to find in low and middle-income countries.

Where reliable crash data are unavailable, a pro-active approach is recommended to assess the small proportion of the network where the majority of crash fatalities and serious injuries occur using a mixture of road inspection and available macro casualty and traffic flow data (see section 3.3.2). The International Road Assessment Programme (iRAP, 2007)^{7,8} provides road safety inspection tools which systematically rate the safety of roads and identify related mass action infrastructure investment programs and likely safety benefits in terms of lives saved, injuries avoided and economic returns (see Box 7).

Box 7: The International Road Assessment Programme (iRAP)

iRAP tools are used to prepare infrastructure safety programs in a systematic way. In broad terms they specify the safety of network sections inspected in terms of star ratings or protection scores which indicate how well in the event of common types of road crash (e.g. head-on crashes, hitting unforgiving roadside objects, brutal side impacts at road junctions, running over pedestrians) they protect road users from death and serious injury. These ratings are analogous to the safety ratings which indicate the crashworthiness of vehicles and they range from 1 star, which reflects poor safety quality, through to 5 star, which reflects high safety quality. iRAP tools then generate optional infrastructure programs to improve the safety ratings of the network sections inspected and the associated costs and benefits of doing so. These in turn provide systematic programs of network safety upgrading and ongoing monitoring and evaluation to ensure that the desired safety improvements are delivered. In this way the iRAP approach provides a transparent performance management framework that is easily understood by all parties concerned (road operators, road users, road funders, donors, politicians and community members) and which unambiguously puts the emphasis on assuring the health and safety of road users and providing objective measures of how well this is being achieved (iRAP, 2007).^{7,8}

Improved safety behaviors

General deterrence-based traffic safety enforcement and education measures in high-risk corridors should be developed to seek compliance with alcohol limits, seat-belt and helmet usage, and speed limits in the targeted corridors and areas (see Box 8). Good practice guidelines to assist the preparation of these interventions have been produced in partnership by the World Health Organization, the FIA Foundation for the Automobile and Society, the Global Road Safety Partnership and the World Bank, and they can be used to assist project preparation and implementation (World Health Organization, 2006; Global Road Safety Partnership, 2007 & 2008; FIA Foundation, 2008).^{9, 10, 11, 12}

Other safety behaviors such as commercial driver fatigue and drugged driving may also be an issue in the identified high-risk corridors and these too should be targeted with general deterrence-based police operations.

Box 8: General deterrence-based traffic safety enforcement

With the emergence of targeted safety programs (see Section 3.1.4 (iii)) the approach to traffic safety enforcement shifted from an offender apprehension model to a general deterrence model where all road users were targeted. Traffic safety enforcement became focused on injury prevention measures and improved safety behaviors such as reduced speeds, less drink driving and increased wearing of safety belts and helmets were promoted as contributing to reduced deaths and injuries.

Traffic safety enforcement aims at controlling road user behaviour by preventative, persuasive and punitive measures designed to achieve the safe and efficient movement of traffic. It consists of legislation and related road user penalties to govern the safe use of the traffic system, and traffic policing and coordinated social marketing campaigns targeting key safety behaviours aimed at ensuring road user compliance with safety standards and rules. Enforcement outcomes depend upon (1) the perceived risk of detection, (2) the severity of the punishment, and (3) the immediacy of the punishment. Drivers are deterred from offending to the extent that they think they will be caught, and then severely and swiftly punished. Offenders who are caught and punished may change their behaviour as a result of the experience. Where this occurs, it is known as specific deterrence. But many others also change their behaviour, not because of the punishment experience, but because of the threat of it. This is known as general deterrence.

Enforcement begins with observation. The aim is not so much to catch offenders but to deter them. Observation is of course costly. It would for instance be prohibitively expensive to observe all road traffic all the time, though this situation is changing with improved automated camera technologies. What is needed in targeted high-risk corridors is to make drivers think that they are being observed, or might be being observed, even when they are not. This can only be achieved through the use of general deterrence measures (Bliss et al, 1998).¹³

Box 9: Improved emergency medical and rehabilitation services

Effective post-crash care is characterized by efficient emergency notification, fast transport of qualified medical personnel, correct diagnosis at the scene, stabilization of the patient, prompt transport to point of treatment, quality emergency room and trauma care, and extensive rehabilitation services.

Post-crash care improvement must address the chain of interventions which can commence with bystanders at the scene of the crash, through to emergency rescue, care and trauma services, on to longer-term rehabilitation. In low and middle-income countries attention to pre-hospital care is important, especially in terms of training for first-responders, improving access to the emergency medical system, and coordinating emergency rescue services. Basic improvements in the hospital setting are also important, addressing human resources and trauma-related equipment, some of which is not expensive.

High returns can be expected from these interventions. For example, a data analysis of crash risks in India compared to Sweden indicated that while crash risks in terms of vehicle kilometres travelled were only 50% higher in India and casualties per crash 60% higher, the ratio of fatalities to casualties was 3.8 times higher which indicated that improvements in rescue systems and emergency medical care in India would be highly beneficial (Carlsson et al, 1990).¹⁶

Rehabilitation services are also an essential component of comprehensive post-hospital care. Related to this, third-party motor vehicle insurance schemes provide an important mechanism to fund essential services and reduce poverty impacts.

Improved post-crash response

Where existing services are poor, significant benefits can accrue to improved pre-hospital and victim recovery services in the identified high-risk corridors and areas, and targeted programs should be developed to address this priority (see Box 9). Guidelines produced by the World Health Organization can be used to assist the preparation and implementation of these services (WHO, 2004 & 2005).^{14, 15}

It is important that post-crash responses are integrated with the other preventative measures being taken in the targeted high-risk corridors and areas, as this will ensure that they are appropriately dimensioned in terms of level of service required, rather than over-supplying services where preventative measures are lacking.

Performance targets

Performance targets should be set for the identified high-risk corridors and areas. These should take the form of final outcomes, intermediate outcomes, and outputs (see section 3.13). Every effort must be made to get reliable baseline estimates of current performance in the targeted corridors and areas and this will require combining available police and health sector data. Examples of performance target measures are presented in Table 4.

It is important that performance targets are ambitious and it should be recognized that the project aims to determine what can be achieved with the systematic application of good practice measures. In this regard lack of achievement of ambitious targets should not be viewed as a project failure, as the project should be designed as a learning by doing exercise (see section 3.3.2) which aims to produce tangible evidence of what can be achieved under prevailing country conditions. These country conditions may differ considerably from those experienced in good practice environments that set the performance expectations.

Table 4: Road safety performance measures

Category	Examples of possible measures
Risk exposure	Traffic volumes by vehicle and road user type
Final safety outcomes	Deaths and injuries recorded by Police Hospital data for road deaths and injuries recorded by Health authorities Other sources of death and injury registration
Intermediate safety outcomes	Average vehicle speeds by road type, summer and winter Front and back seat safety belt wearing rates, driver and passengers Motor cycle helmet wearing rates, driver and pillion Drug impairment levels Skid resistance of road surfaces Road infrastructure crash safety ratings (risk and protection scores) Vehicle compliance with testing standards Vehicle crash safety ratings Average emergency medical services response times Targeted audience groups' recall and assessed relevance of publicity and awareness campaign messages Community attitudes to road safety
Intervention outputs	Number of safety engineering treatments per section of road network Number of emergency medical services responses to road network crashes Hours of Police enforcement targeting high-risk behaviors Numbers of Police infringement notices issued Media frequency and reach of publicity and awareness campaigns supporting Police enforcement Hours of school-based education activities Volume of driver training, testing and licensing activities Volume of vehicles tested

(iii) Policy reforms

In parallel with the focus on high-risk corridors and areas the project concept should address national policy reform priorities identified by the capacity review. Where relevant and feasible, addressing these priorities should be integrated with initiatives in high-risk corridors and areas to enhance the evidence base for policy reform.

For example, building on the findings of the capacity review, entry and exit requirements for drivers and vehicles (both private and commercial) may require benchmarking against good international practice, to identify areas for improvement. Information to support this policy reform process may be provided by enforcement and monitoring initiatives conducted in the project corridors and areas. Other reform initiatives such as reviewing funding and resource allocation processes, or legislative reviews, may be conducted separately from high-risk corridor and area initiatives, but again they could still benefit from evidence of road safety performance and related issues gained during the corridor and area programs.

4.3.5 Confirm project management arrangements

Following completion of the project concept in terms of its objectives, scale, capacity building priorities and results focus, it becomes important to finalize and confirm the project management arrangements. The early resolution of this requirement is vital to ongoing project success as it is essential that all partners have a shared understanding of the project's objectives and how it will be managed to achieve them.

(i) Lead agency role

The project management arrangements should model the vital lead agency contribution to directing and sustaining the production of improved road safety results and be designed to maximize the potential for the lead agency to rapidly assert itself in this role and build its capacity accordingly. This is particularly crucial given the multisectoral nature of projects and the propensity for participating agencies in the absence of clear leadership to revert to managing their particular contributions within their own agency frameworks with little reference to the shared focus on results and the coordination task required to maximize project effectiveness.

Considerable effort should be put into ensuring that the lead agency role is well understood, acknowledged and accepted by other agencies and external groups participating in the project, as this will prove crucial to ongoing project success in terms of building lead agency capacity.

(ii) Coordination

Coordination concerns the orchestration and alignment of the interventions and other related institutional management functions delivered by government partners and related community and business partnerships to achieve the desired focus on results (see section 3.1.1 (ii) and Annexes 2 – 4). The emphasis in coordination is upon building effective working relationships across the road safety partnership for decision-making and consultative purposes (see Box 10).

The lead agency role is closely aligned and related to the achievement of effective project coordination (see Annex 2). National coordinating bodies may exist, but unless their membership includes agencies fully accountable and funded for road safety results, experience suggests they will be ineffective. More specifically, in good practice countries these coordinating bodies are usually the extension of accountable lead agencies that own and use them as platforms for mobilizing resources and coordinating and focusing multisectoral partnerships, in pursuit of agreed results.

Box 10: Coordination structures and working procedures

Coordination structures should engage project participants on at least three decision-making and consultative levels: agency leaders, senior agency managers, and external partners and stakeholders. This suggests that the basic project management arrangements should at least include a high-level Steering Committee which comprises agency heads, a senior managers' Working Group, and an extended senior managers' Consultative Group that includes wider community representation. These project management arrangements would be supported by expertise and resources provided by the lead agency.

The high-level Steering Committee would need to meet around four times a year to track project progress and take related decisions and provide guidance where necessary. The senior managers' Working Group would meet on a more regular basis to guide the day-to-day management of the project, and the Consultative Group would meet as required to address relevant project issues which required community input (see Annexes 2 – 4 for examples of arrangements in Australia and New Zealand which reflect these types of structures and processes).

Project management arrangements should be integrated with existing coordination mechanisms. Where these do not exist the opportunity should be taken to create them in the context of the project with the design and implementation of structures and processes that can ultimately expand to take on the national task to deliver the long-term investment strategy. Where a national coordination body already exists this should take the role of the project Steering Committee. In the absence of such a body the Steering Committee would be structured as a nascent national coordination body, with a view to it growing into this role over the life of the project and becoming more formalized to oversight the national rollout program recommended on the basis of the results achieved by the project.

Likewise where a lead agency already exists it would take the role of supporting the coordination structures and processes with the necessary expertise and resources. It is essential that a central role is created for the lead agency that enables it to deliver effectively on its institutional management functions and build and strengthen its leadership and partnership capacity in the process. In the absence of a lead agency the opportunity would be taken by the project to designate the lead agency and to establish and resource a small lead agency secretariat which can support the project management arrangements. As with the Steering Committee, the intention should be for the secretariat to grow in capacity over the life of the project and be further strengthened to oversight the recommended national rollout program based on the project's findings.

Coordination structures and processes must be adjusted to reflect the project partnerships that have been created to enhance project effectiveness. It is important to find ways to integrate community groups, NGOs and private sector partners into the project from the outset, to ensure their effective engagement in its ongoing management and implementation. This could include their core membership in the project Steering Committee, Working Group and Consultative Group, where appropriate.

4.3.6 Specify monitoring and evaluation procedures

Monitoring and evaluation procedures for the targeted high-risk corridors and areas should be addressed as an integral element of the project concept.

(i) Procedures

The design and management of monitoring and evaluation procedures should generally be a lead agency responsibility but the actual data collection may be carried out by other agencies, as in the case of Police crash reporting, or consulting firms for seatbelt and cycle helmet usage surveys. As noted in section 4.3.3 (iii) it may also be appropriate to have the project monitoring and evaluation programs carried out by a local research center, if such an entity with sufficient capacity exists to undertake this function.

Monitoring and evaluation requirements also require early resolution to ensure that baseline performance measures in the targeted high-risk corridors and areas and ongoing measurement programs are implemented in a timely fashion and contribute to active management of the project. Control corridors and areas should also be identified and included in baseline and ongoing measurement programs.

Project monitoring and evaluation procedures should be designed with a view to rolling them out more systematically across the network once they have been established and proven to be operationally efficient and effective.

(ii) Reporting

Related to the project management and monitoring and evaluation requirements is the need to reach early agreement on the project performance reporting requirements. Again it is vital to have consensus across the project partners on the process, content and timing of project reporting arrangements.

4.3.7 Prepare detailed project design

Detailed design of the project can commence once agreement has been reached on the project concept and related management and monitoring and evaluation and reporting arrangements for the targeted high-risk corridors and areas. Successful implementation of the investment strategy hinges on designing projects that accelerate the transfer of road safety knowledge to participants, strengthen the capacity of participating partners and stakeholders, and rapidly produce results that provide benchmark measures to dimension a national roll-out program.

Accelerating the transfer of knowledge and strengthening capacity must be grounded in practice by a ‘learning by doing’ process backed with sufficient targeted investment to overcome the barriers presented by the revealed capacity weaknesses at the global, regional and country levels (see section 3.3.2).

The project design should clearly specify all required outputs for each component and where relevant their linkages with the overall performance targets set for the high-risk corridors and areas covered by the project.

4.3.8 Address project implementation priorities

To ensure efficient and effective project implementation and achievement of project objectives the following priorities must be closely addressed:

(i) Role of technical assistance

In situations where road safety management capacity is weak, strong reliance will be placed on recruiting external technical assistance support to help guide project implementation. It is crucial that this assistance is provided first and foremost in the form a mentoring role to local staff who will undertake the tasks concerned, rather than being seen as external expertise that has been hired to take responsibility for their delivery. This is particularly relevant to the overall strategic management of the project, but it also relates to more specialized technical tasks.

Recognition of this priority to ensure that local staff are empowered and challenged to take responsibility for project implementation will influence the nature and specification of external technical assistance packages. It will require a shift from the more common approaches of the past where external consulting teams would provide self-contained, expert services, leaving in many cases limited residual local capacity once the consulting teams departed. This approach has proved to be unsustainable.

A high priority must be placed on providing technical assistance to support the project at a strategic management level where strong local leadership skills must be developed and to help guide related institutional reform and restructuring initiatives. Emphasis should be placed on providing a more process-orientated style of technical assistance where external experts work alongside local staff to help accelerate knowledge transfer and engender institutional capacity strengthening of a more sustainable nature.

(ii) Promotion

Comprehensive promotion of the project is also crucial to achieving capacity building objectives and engendering a shared societal responsibility to support the delivery of the interventions required to achieve the desired focus on results. This must go beyond the conventional understanding of promotion as road safety advertising, often focused on supporting targeted safety interventions, and address the overall level of government ambition to comprehensively improve road safety performance in the longer term in accordance with the long-term investment strategy.

As a priority the project should include a communications campaign to launch the long-term investment strategy and promote its goals by highlighting the tangible project actions that are required to achieve them. In this regard the project should be promoted in the context of the government's broader road safety strategy and presented as a concrete example of the type of the initiatives that will be taken in partnership with the wider community to benefit them and the nation. The project should also include more specific public education campaigns designed to support project activities targeting key safety behaviors in the corridors and areas concerned and these should be integrated with the broader strategic promotion of the project.

(iii) *Knowledge transfer and roll-out program*

A core project objective is the achievement of quick and proven safety results and the development of benchmark performance measures to dimension a national roll-out program of successful initiatives to the remaining high-risk corridors and areas. This places a high priority on ensuring that the monitoring and evaluation procedures are effective and that the focus on results to be achieved underpins the leadership and coordination of the project during its implementation. It also places a high priority on sustaining the emphasis on transferring good practices into the country concerned and accepting the challenges of innovation and learning by doing that this entails.

The aim is to accelerate knowledge transfer and build country capacity in a targeted process that demonstrates when good practice measures are taken road safety performance can be dramatically improved. In this way the business case for higher levels of sustained investment can be prepared, built on a platform of strengthened country capacity and proven success.

Above all, it should be clearly understood that the project is the first step in a longer process and that an overarching priority is placed on ensuring that the project's research and development and knowledge transfer potential is fully realized.

4.4 Conclusions

These guidelines have been prepared to assist the implementation of the recommendations of the *World Report on Road Traffic Injury Prevention*. In keeping with modern road safety management practice the guidelines promote a *Safe System* approach which also contributes to the achievement of other high priority global, regional and country development goals of sustainability, harmonization and inclusiveness.

The successful implementation of the *World Report* recommendations requires them to be treated as a total-ity and the process of doing so will take at least a decade in low and middle-income countries. Countries must first assess their road safety management capacity and state of readiness to commit to the long-term reforms and investments necessary to bring safety outcomes under control. The guidelines provide diagnostic tools which appraise the underlying conditions which determine country success or failure and the best way forward. They set out a two-stage process for generating country investment which addresses and overcomes the barriers imposed by weak road safety management capacity. They ensure that measures taken are properly sequenced and adjusted to the absorptive and learning capacity of the country concerned. However, their effective application must be supported by recognized road safety specialists with successful strategic management experience at country and international levels.

Each country faces unique circumstances and challenges, but a key conclusion to be drawn from the high-income country case studies provided in Annexes 2 – 4* is that road safety management at the country level is a complex business. In this regard the complexity of the institutional arrangements in high-income countries can be viewed as a surrogate indicator of success and the commitment to sustained road safety investment. The case studies are instructive in their own right in terms of highlighting the institutional arrangements and scale of investment evident in high-income countries where safety outcomes are successfully managed and performance shows continuous improvement. They merit the close attention of low and middle-income countries seeking to bring their safety outcomes more rapidly under control.

An important message of the guidelines is that the implementation of the *World Report* recommendations must be grounded in practice by a learning by doing process backed with sufficient targeted investment to overcome the barriers presented by weak institutional capacity. In this regard the guidelines provide useful tools, but their value is contingent on a country's willingness to support and promote their use with strong institutional leadership and sustained investment on a scale that produces substantial and measurable results.

* Note that Annexes 2 – 4 are not reproduced in this updated edition and can be downloaded from the GRSF website at worldbank.org/GRSF. The interested reader is referred to the country case studies in the original publication (New Zealand; Great Britain; The Netherlands; Sweden; State of Victoria, Australia; State of Western Australia, Australia; Malaysia; and Poland) to gain a fuller appreciation of the institutional models that have helped guide the preparation of the road safety management framework that underpins the capacity review process.

References

- ¹ Bliss T (2004). *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention*, Transport Note TN-1, The World Bank, Washington, DC.
- ² Wegman F, Snoeren P (2005). *Review of Road Safety Management Capacity in Low and Middle-Income Countries*, SWOV, Dutch Institute for Road Safety Research, Leidschendam.
- ³ Lawrence M (2006). *Review of the Road Safety Capacity Review Methodology Contained in World Bank Transport Note (TN-1)*, World Bank, Washington DC.
- ⁴ Howard E, Breen J (2006 – 2008). *Road safety management capacity reviews in Ukraine, Armenia, Bosnia and Herzegovina, Serbia, Bangladesh*. World Bank, Washington DC.
- ⁵ Eds. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E, Mathers C (2004). *World Report on Road Traffic Injury Prevention*, World Health Organization, Geneva.
- ⁶ Elvik R (2007). *State-of-the-art approaches to road accident black spot management and safety analysis of road network*, Institute of Transport Economics, Norway.
- ⁷ International Road Assessment Program (2007). *Getting Organized to Make Roads Safe*, Basingstoke, United Kingdom.
- ⁸ International Road Assessment Program (2008). *Vaccines for Roads: the new iRAP tools and their pilot application*, Basingstoke, United Kingdom.
- ⁹ FIA Foundation for the Automobile and Society (2008). *Seat-belts and child restraints: a road safety manual for decision-makers and practitioners*, London.
- ¹⁰ Global Road Safety Partnership (2007). *Drinking and driving: a road safety manual for decision-makers and practitioners*, Geneva.
- ¹¹ Global Road Safety Partnership (2008). *Speed Management: a road safety manual for decision-makers and practitioners*, Geneva.
- ¹² World Health Organization (2006). *Helmets: a road safety manual for decision-makers and practitioners*, Geneva.
- ¹³ Bliss T, Guria J, Lauridsen G, Rockliffe N and Strachan G (1998). *An international comparison of road safety enforcement*, Safety Directions Working Paper 3, Land Transport Safety Authority, Wellington.
- ¹⁴ World Health Organization (2005). *Prehospital trauma care systems*, Geneva.
- ¹⁵ World Health Organization (2004). *Guidelines for essential trauma care*, Geneva.
- ¹⁶ Carlsson G and Hedman K-O (1990). *A Systematic Approach to Road Safety in Developing Countries*, Swedish National Road Administration and the World Bank, Washington DC.

SECTION III

ANNEXES

ANNEX 1



Technical assistance for the preparation and implementation of Safe System projects

Sample Terms of Reference

Technical Assistance for the Preparation and Implementation of Safe System Projects

Sample Terms of Reference

Introduction

This annex provides sample terms of reference for the procurement of technical assistance services to support the preparation and implementation of *Safe System* projects. The terms of reference are aligned with the project component categories, as set out in these guidelines (demonstration projects in targeted high-risk corridors and areas, policy reviews, project management, and monitoring and evaluation systems), and they are generically presented to address technical assistance objectives, core tasks and related outputs, scheduling and professional skills and experience required.

Note that the terms of reference are not exhaustive, as all projects have unique requirements and must reflect the prevailing road safety management capacity in the context concerned. However, common components have been covered to *illustrate* the broad parameters of the required technical assistance outputs and they can be used to help *tailor* a more precise specification of them in accordance with project needs.

A strong emphasis has been placed on the mentoring and training of local staff to help accelerate knowledge transfer and engender institutional capacity strengthening, and on monitoring and evaluation and the specification of ongoing initiatives designed to ensure the sustainability of successful measures taken. A key requirement is that the technical assistance team provides a package of services that integrate the delivery of project components, improves their efficiency and effectiveness, and transfers sustainable knowledge and skills to participating agencies and the national consulting industry (*refer section 4.3.8 (i); Section 2*).

Demonstration projects in targeted high-risk corridors and areas

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 1

Safe Road Infrastructure

Objectives

The objectives of the required technical assistance services are to:

- Advise on and support the application of proactive tools and procedures for the identification of hazardous road infrastructure (e.g. International Road Assessment Programme [iRAP] surveys, safety inspections, safety audits) and the design, implementation, maintenance and evaluation of improved infrastructure safety features.
- Train road agency and associated consulting staff, in the design, implementation, maintenance and evaluation of improved infrastructure safety programs in high-risk corridors and areas.
- Support the preparation of a (national) post-project program of infrastructure safety improvements network-wide, based on successful experience in the high-risk corridors and areas.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Advise on and support the application of proactive tools, procedures and programs for improving infrastructure safety in the high-risk corridors and areas.*

Outputs

- i. Guidelines for the conduct of iRAP, safety inspection and safety audit programs in the high-risk corridors and areas.
- ii. Guidelines for the design, implementation and maintenance of innovative mass action programs providing systematic infrastructure safety improvements in the high-risk corridors and areas (e.g. barriers, roundabouts, traffic calming, pedestrian and motorcyclist/cyclist facilities, signs and markings, lighting, etc).
- iii. On-the-job support to the application of the guidelines to improve infrastructure safety in the high-risk corridors and areas including preparation of designs for innovative mass action programs and draft bidding documents for civil works requirements.

- (b) *Train road agency and associated national consulting company staff in the use of proactive tools and procedures for improved infrastructure safety (and provide related support to project road crash data and analysis and monitoring and evaluation systems components).*

Outputs

- i. Preparation and delivery of basic and advanced training programs in proactive tools and procedures for improved infrastructure safety, and related monitoring and evaluation procedures.

- (c) *Evaluate the efficiency and effectiveness of improved rural and urban road infrastructure safety programs in high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of improved infrastructure safety programs in high-risk corridors and areas (coordinated with project monitoring and evaluation component).
- ii. Revision of the guidelines for improved infrastructure safety (developed in (a) i – ii above) based on the evaluation findings in high-risk corridors and areas.

- (d) *Prepare a (national) post-project infrastructure safety improvement program and guidelines.*

Outputs

- i. Post-project infrastructure safety improvement program, including program cost estimates and implementation schedule.
- ii. Guidelines for improving infrastructure safety network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the design, implementation, maintenance and evaluation of improved infrastructure safety programs in the high-risk corridors and areas and related staff training.
- Final year of project: Support the preparation of a post-project program and guidelines for the improvement of infrastructure safety network-wide.

Professional skills and experience required

Safety Engineering Specialist(s)

One or more internationally recognized specialists with about 10 years practical experience in road safety rating and inspection (including iRAP experience) and audit, and the design of innovative infrastructure safety facilities. Experience with improving infrastructure safety in mixed-traffic/mixed speed road environments in rapidly motorizing countries is essential.

Safety Analysis Specialist

An internationally recognized specialist with about 10 years experience conducting scientific analyses of road environment, vehicle and human factors contributing to road crashes and injuries. Hands-on experience of quantitative evaluations of safety interventions and outcomes is essential. Experience of road safety analyses in developing and transitional countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Support from the International Road Assessment Programme (iRAP)

iRAP support is recommended for the delivery of these outputs.

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 2

General Deterrence Police Enforcement Targeting Unsafe Behaviors

Objectives

The objectives of the required technical assistance services are to:

- Support the introduction and evaluation of general deterrence police enforcement targeting unsafe behaviors in high-risk corridors and areas.
- Train police staff in the implementation and management of general deterrence enforcement targeting unsafe behaviors in high-risk corridors and areas.
- Support the preparation of a (national) post-project program of general deterrence police enforcement targeting unsafe behaviors network-wide, based on successful experience in the high-risk corridors and areas.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Support the preparation of annual police enforcement programs to achieve the general deterrence of unsafe behaviors in high-risk corridors and areas.*

Outputs

- i. Identification of unsafe behaviors in high-risk corridors and areas.
- ii. Operational strategies and tactics and related guidelines to address unsafe behaviors in high-risk corridors and areas.
- iii. Annual programs of (monthly) scheduled enforcement operations targeting unsafe behaviors in high-risk corridors and areas.
- iv. Analysis of equipment needs and specification and costing of additional equipment required to support annual enforcement programs.
- v. Draft bidding documents for the procurement of additional equipment.
- vi. On-the-job support to the implementation of annual enforcement programs.

- (b) *Train police staff at all levels in the implementation of annual enforcement programs in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of a basic training program to upgrade the traffic safety knowledge and skills of road policing staff.
- ii. Preparation and delivery of advanced training course on general deterrence theory and practice, and related operational strategies and tactics.
- iii. Preparation and delivery of management training on the supervision of program implementation by operational staff.

- (c) *Evaluate the efficiency and effectiveness of police enforcement programs in the high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of police enforcement programs in high-risk corridors and areas (coordinated with project monitoring and evaluation component).
- ii. Recommended improvements to police enforcement programs based on the evaluation findings in high-risk corridors and areas.

- (d) *Prepare (national) post-project police enforcement program and finalize guidelines to achieve the general deterrence of identified unsafe behaviors network-wide.*

Outputs

- i. Post-project, network-wide enforcement program, including program cost estimates and implementation schedule.
- ii. Guidelines for police enforcement programs to achieve network-wide general deterrence of identified unsafe behaviors.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the preparation, implementation, evaluation and revision of police enforcement programs in the high-risk corridors and areas, and related staff training.
- Final year of project: Support the preparation of post-project program and guidelines for police enforcement programs network-wide.

Professional skills and experience required

Enforcement Management Specialist

A specialist with about 10 years experience in traffic enforcement leadership, coordination and policy advice in a national Police agency operating a successful general deterrence model. A demonstrated ability to communicate road safety enforcement philosophy and tactics to a broad audience is essential. Previous experience in a law enforcement training facility is desirable.

Enforcement Operations Specialist

A specialist with about 10 years policing experience, including the line-management of traffic enforcement staff. Practical experience in the design, implementation and management of road safety enforcement strategies in a national Police agency operating a successful general deterrence model is essential. A demonstrated ability to communicate road safety enforcement philosophy and tactics to a broad audience is also essential. Previous experience in a law enforcement training facility is desirable.

Enforcement Equipment Specialist

A specialist with about 10 years experience in the specification, sourcing, evaluation and procurement of road safety equipment and tools in a national Police agency operating a successful general deterrence model. A demonstrated understanding of modern operational safety enforcement practices is essential.

Enforcement Training Specialist

A specialist with about 10 years experience in the design, implementation and evaluation of police officer and recruit training and development programs. Operational experience in a national police training college is essential.

Safety Analysis Specialist

An internationally recognized specialist with about 10 years experience conducting scientific analyses of road environment, vehicle and human factors contributing to road crashes and injuries. Hands-on experience of quantitative evaluations of safety interventions and outcomes is essential. Experience of road safety analyses in developing and transitional countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Support from the International Road Policing Organization (RoadPOL)

RoadPOL support is recommended for the delivery of these outputs, given the specialist nature of road policing and the general preference of road policing agencies to work on a peer-to-peer basis with officers from other relevant police agencies.

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 3

Publicity and Awareness Campaigns Supporting Police Enforcement Programs Targeting Unsafe Behaviors

Objectives

The objectives of the required technical assistance services are to:

- Support the introduction and evaluation of publicity and awareness campaigns supporting police enforcement programs targeting unsafe behaviors in high-risk corridors and areas.
- Train designated road safety agency and police staff, and associated national consultants, in the implementation and management of publicity and awareness campaigns supporting police enforcement programs targeting unsafe behaviors in high-risk corridors and areas.
- Support the preparation of a (national) post-project publicity and awareness campaign supporting police enforcement programs targeting unsafe behaviors network-wide, based on successful experience in the high-risk corridors and areas.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Prepare annual publicity and awareness campaigns to support police enforcement programs targeting unsafe behaviors in the high-risk corridors and areas.*

Outputs

- i. Identification and prioritization of high-risk behaviors to be targeted through publicity and awareness campaigns.
- ii. Identification of road user groups demonstrating the identified high-risk behaviors and their extended social and business networks in high-risk corridors and areas.
- iii. Development of key safety messages to high-risk road user groups and their extended social and business networks.
- iv. Identification of electronic, print media and billboard services reaching high-risk road user groups and their extended social and business networks in high-risk corridors and areas.
- v. Annual program of scheduled publicity and awareness campaigns coordinated with police enforcement programs, targeting high-risk road user groups and their extended social and business networks in the high-risk corridors and areas.

- vi. Monitoring and evaluation systems for annual publicity and awareness campaigns, to track message recall and relevance (coordinated with monitoring and evaluation component).
 - vii. Identification of suppliers of market research, public relations and advertising services with sufficient capacity to produce, implement and monitor specified publicity and awareness campaigns.
 - viii. Draft bidding documents for the procurement of required research, production and media services.
 - ix. Assistance with the evaluation of bids for research, production and media services.
 - x. On-the-job support to the implementation of publicity and awareness campaigns.
- (b) *Train designated road safety agency and police staff in the design and implementation of annual publicity and awareness campaigns in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of training programs addressing the principles and practices of effective publicity and awareness campaigns for traffic safety, and related monitoring and evaluation procedures.
- (c) *Evaluate the efficiency and effectiveness of publicity and awareness campaigns supporting police enforcement targeting unsafe behaviors in the high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of publicity and awareness campaigns in high-risk corridors and areas (coordinated with project monitoring and evaluation component).
 - ii. Recommended improvements to publicity and awareness campaigns supporting police enforcement programs targeting unsafe behaviors (to be fed back into programs developed in (a) v above) based on the evaluation findings in high-risk corridors and areas.
- (d) *Prepare a (national) post-project publicity and awareness campaign and guidelines to support police enforcement programs targeting unsafe behaviors network-wide.*

Outputs

- i. Post-project, network-wide publicity and awareness campaigns, including campaign cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for publicity and awareness campaigns supporting police enforcement programs targeting unsafe behaviors network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the preparation, implementation and evaluation of publicity and awareness campaigns supporting police enforcement programs in the high-risk corridors and areas, and related staff training.
- Final year of project: Prepare a post-project publicity and awareness campaign and guidelines to support police enforcement programs network-wide.

Professional skills and experience required

Communications Specialist

A specialist with about 10 years experience in managing research-based advertising and public relations in road safety or a similar field. Previous account management experience in an advertising agency or public relations firm is desirable. Experience with successful social marketing campaigns is essential.

Community Survey Specialist

A specialist with about 10 years market research experience of quantitative and qualitative community attitude surveys. Experience of conducting community attitude surveys in developing and transitional countries is desirable.

Safety Analysis Specialist

An internationally recognized specialist with about 10 years experience conducting scientific analyses of road environment, vehicle and human factors contributing to road crashes and injuries. Hands-on experience of quantitative evaluations of safety interventions and outcomes is essential. Experience of road safety analyses in developing and transitional countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 4

Crash Victim Recovery Services

Objectives

The objectives of the required technical assistance services are to:

- Support the improvement and evaluation of crash victim recovery services in high-risk corridors and areas.
- Train crash victim recovery services staff and other first responders at crashes in improved crash victim recovery procedures.
- Support the preparation of a (national) post-project program of improved crash victim recovery services network-wide, based on successful experience in the high-risk corridors and areas.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Prepare and support improved crash victim recovery services programs in the high-risk corridors and areas.*

Outputs

- i. Identification of priorities for improved crash victim recovery services in the high-risk corridors and areas.
- ii. Annual programs of (seasonally) scheduled improved crash victim recovery services in the high-risk corridors and areas.
- iii. Specification and costing of equipment and facilities, communications systems and staffing requirements for improved crash victim recovery services in the high-risk corridors and areas.
- iv. Draft bidding documents for the procurement of equipment and facilities.
- v. On-the-job support to the implementation of improved crash victim recovery services in the high-risk corridors and areas.

- (b) *Train emergency staff and other first responders at crash scenes in the provision of improved crash victim recovery services in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of training programs for improved crash victim recovery services in the high-risk corridors and areas.

- (c) *Evaluate improved crash victim recovery services programs in the high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of improved crash victim recovery services in the high-risk corridors and areas (coordinated with project monitoring and evaluation component).
- ii. Recommended improvements to crash victim recovery services network-wide (to be fed back into programs developed in 35 (a) ii above), based on the evaluation findings in high-risk corridors and areas.

- (d) *Prepare (national) post-project crash victim recovery services program and guidelines.*

Outputs

- i. Post-project, network-wide crash victim recovery services program, including cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved crash victim recovery services network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Prepare and support the preparation and implementation of improved crash victim recovery services in the high-risk corridors and areas and related staff and other first responder training.
- Final year of project: Assist the preparation of a (national) post-project crash victim recovery services program and guidelines network-wide.

Professional skills and experience required

Crash Victim Recovery Specialist

A specialist with about 10 years experience with the design, implementation and management of crash victim recovery and first responder training programs in developing and transitional countries. A thorough knowledge of international best practice and experience working with senior officials and specialist staff in national health agencies in developing and transitional countries is essential.

Emergency Medical Services Specialist

A specialist with about 10 years experience with the design, implementation and management of emergency medical services in developing and transitional countries. A thorough knowledge of international best practice and experience working with senior officials and specialist staff in national health agencies in developing and transitional countries is essential.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 5

Emergency Medical Services

Objectives

The objectives of the required technical assistance services are to:

- Support the improvement and evaluation of emergency medical services in high-risk corridors and areas.
- Train emergency medical services staff in the delivery of improved services in the high-risk corridors and areas.
- Support the preparation of a (national) post-project program of emergency medical services network-wide, based on successful experience in the high-risk corridors and areas.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Prepare and support improved emergency medical services programs in the high-risk corridors and areas.*

Outputs

- i. Identification of priorities for improved emergency medical services in the high-risk corridors and areas.
- ii. Annual programs of (seasonally) scheduled improved emergency medical services in the high-risk corridors and areas.
- iii. On-the-job support to the implementation of improved emergency medical services in the high-risk corridors and areas.

- (b) *Train Emergency Medical Services staff in the provision of improved services in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of training programs for improved emergency medical services in the high-risk corridors and areas.

- (c) *Evaluate improved emergency medical services programs in the high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of improved emergency medical services in the high-risk corridors and areas (coordinated with project monitoring and evaluation component).
- ii. Recommended improvements to emergency medical services network-wide (to be fed back into programs developed in (a) ii above), based on the evaluation findings in high-risk corridors and areas.

- (d) *Prepare (national) post-project emergency medical services network-wide program and guidelines.*

Outputs

- i. Post-project, network-wide emergency medical services program, including cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved emergency medical services network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Assist and support the preparation and delivery of improved emergency medical services in the high-risk corridors and areas and related staff training.
- Final year of project: Assist the preparation of a (national) post-project emergency medical services program and guidelines network-wide.

Professional skills and experience required

Emergency Medical Services Specialist

A specialist with about 10 years experience with the design, implementation and management of emergency medical services in developing and transitional countries. A thorough knowledge of international best practice and experience working with senior officials and specialist staff in national health agencies in developing and transitional countries is essential.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 6

School-Based Road Safety Education for Children

Objectives

The objectives of the required technical assistance services are to:

- Support the improvement and evaluation of school-based road safety education for children in high-risk corridors and areas.
- Train Ministry of Education staff in the implementation and further management of improved school-based road safety education for children in high-risk corridors and areas.
- Support the preparation of a (national) post-project program of school-based road safety education network-wide for children, based on successful experience in the high-risk corridors and areas.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Prepare and support improved school-based road safety education programs for children in the high-risk corridors and areas.*

Outputs

- i. Improved curricula, teaching methods and supporting resources for school-based road safety education programs for children.
- ii. Annual programs of improved school-based road safety education in the high-risk corridors and areas.
- iii. Draft bidding documents for the procurement of supporting resources.
- iv. On-the-job support to the implementation of the improved school-based road safety education programs.

- (b) *Train teachers in the implementation of improved school-based road safety education programs in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of teacher training program on improved curricula and teaching methods, and related monitoring and evaluation procedures.

- (c) *Evaluate the efficiency and effectiveness of improved school-based road safety education programs for children in the high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of improved school-based road safety education programs (coordinated with project monitoring and evaluation component).
- ii. Recommended improvements to school-based road safety education network-wide for children (to be fed back into programs developed in (a) ii above) based on the evaluation findings in high-risk corridors and areas.

- (d) *Prepare a (national) post-project program and guidelines for a school-based road safety education program for children network-wide.*

Outputs

- i. Post-project, network-wide school-based road safety education program, including cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved school-based road safety education programs for children network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the preparation, implementation and evaluation of improved school-based road safety education programs for children in the high-risk corridors and areas, and related staff training.
- Final year of project: Prepare a post-project program and guidelines for school-based road safety education for children network-wide.

Professional skills and experience required

Education Specialist

A specialist with about 10 years experience developing curricula for road safety education in schools and training teachers in this subject. A thorough knowledge of international best practice in school-based road safety education is essential. Previous experience working with national education agencies in developing countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Demonstration projects in targeted high-risk corridors and areas**

Sample component 7

Safety regulations and Procedures for Managing Commercial Vehicle Loading and the Carriage of Oversized and Dangerous Goods

Objectives

The objectives of the required technical assistance services are to:

- Review safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods.
- Recommend and support improvements to safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods in high-risk corridors and areas.
- Train police, regulatory agency and commercial operator staff in the implementation of improved safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods in high-risk corridors and areas.
- Support the preparation of a (national) post-project program to upgrade safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Review and improve current safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods.*

Outputs

- i. International good practice benchmarking of current safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods.
- ii. Recommended short-term and long-term improvements to current and planned safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods (including police enforcement campaigns, targeting commercial vehicle overloading and the carriage of oversized and dangerous goods, to support police enforcement and related publicity and awareness components in high-risk corridors and areas), and action plan for improvement program.
- iii. On-the job support to the commercial vehicle safety management improvement program.

- (b) *Train police, regulatory agency and commercial operator staff in improved safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of training programs on improved safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods.

- (c) *Evaluate the efficiency and effectiveness of improved safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods in the high-risk corridors and areas.*

Outputs

- i. Design and conduct of evaluations of improved safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods (coordinated with project monitoring and evaluation component).

- ii. Recommended improvements to safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods (to be fed back into programs developed in (a) ii above) based on the evaluation findings in high-risk corridors and areas.

- (d) *Prepare (national) post-project program and guidelines for introducing improved safety regulations and procedures for the management of commercial vehicle loading and the carriage of oversized and dangerous goods network-wide.*

Outputs

- i. Post-project program for the improvement of safety regulations and procedures managing commercial vehicle loading and the carriage of oversized and dangerous goods, including program cost estimates and implementation schedule.

- ii. Guidelines detailing improved safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support review of safety regulations and procedures for managing commercial vehicle loading and the carriage of oversized and dangerous goods, implementation of short-term and long-term improvements, and related staff training.
- Final year of project: Prepare a post-project program and guidelines for managing commercial vehicle loading and the carriage of oversized and dangerous goods network-wide.

Professional skills and experience required

Commercial Vehicle Safety Specialist

A specialist with about 10 years experience in the area of commercial vehicle driver health and safety and commercial vehicle safety standards. Extensive experience working with commercial transport operators in the provision of safety assurance programs and related training is essential.

Safety Legislation Specialist

A specialist with about 10 years experience in transport sector legislation, with specific knowledge of traffic safety legislation and sanctions in a national policing jurisdiction. Knowledge of international legislative developments in general deterrence enforcement models is essential. Previous experience with road safety legislation in developing or transitional countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Project policy reviews

Technical assistance for **Project policy reviews**

Sample component 1

Driver Training, Testing and Licensing Practices

Objectives

The objectives of the required technical assistance services are to:

- Review driver training, testing and licensing practices.
- Recommend and support measures to upgrade driver training, testing and licensing practices.
- Support the preparation of a (national) post-project program to upgrade driver training, testing and licensing practices.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Review and improve current driver training, testing and licensing practices.*

Outputs

- i. International good practice benchmarking of current driver training, testing and licensing practices.
- ii. Recommended short-term and long-term improvements to the current and planned practices for driver training, testing and licensing, and action plan for improvement program.
- iii. On-the job support to the driver training, testing and licensing improvement program.

- (b) *Prepare a (national) post-project driver training, testing and licensing program and guidelines.*

Outputs

- i. Post-project, network-wide driver training, testing and licensing program, including cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved driver training, testing and licensing practices.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the review of driver training, testing and licensing practices and support implementation of short-term and long-term improvements.
- Final year of project: Prepare a post-project program and guidelines for driver training, testing and licensing practices.

Professional skills and experience required

Driver Testing and Licensing Specialist

A specialist with about 10 years experience with motor vehicle driver training, testing and licensing in a national jurisdiction. A thorough knowledge of international best practice – including graduated driver licensing systems – is essential. Previous experience in the provision of advisory services to a national driver testing and licensing agency in a developing or transitional country is desirable.

Registry Management Specialist

A specialist with about 10 years experience with the management of modern registry systems for drivers and vehicles and related business procedures and technology. Extensive experience working at a senior management level in a national registry is essential. Previous experience working with a national registry in a developing or transitional country is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Project policy reviews**

Sample component 2

Vehicle Testing Practices

Objectives

The objectives of the required technical assistance services are to:

- Review vehicle-testing practices.
- Recommend and support improvements to vehicle testing practices.
- Train police in roadside vehicle inspection methods.
- Support the preparation of a (national) post-project program to upgrade vehicle-testing practices.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Review and improve current vehicle testing practices.*

Outputs

- i. International good practice benchmarking of current vehicle testing practices.
- ii. Recommended short-term and long-term improvements to current and planned practices for vehicle testing, and action plan for improvement program.
- iii. On-the job support to the vehicle testing safety improvement program.

- (b) *Train police in roadside vehicle inspection methods in the high-risk corridors and areas.*

Outputs

- i. Preparation and delivery of training programs for police on roadside vehicle inspection methods (to support police enforcement component).

(c) *Prepare a (national) post-project vehicle testing program and guidelines.*

Outputs

- i. Post-project vehicle testing program, including program cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved vehicle testing practices and systems.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the review of vehicle-testing practices and implementation of short and long-term improvements and related staff training.
- Final year of project: Prepare a post-project program and guidelines for improved vehicle testing practices.

Professional skills and experience required

Vehicle Safety Specialist

A specialist with about 10 years experience in the area of vehicle safety inspection and testing. Detailed knowledge of and experience with international standards for motor vehicles and international practice of vehicle testing and certification is essential. Previous experience working with a national vehicle testing and inspection agency, preferably in a developing or transitional country, or for a major international vehicle manufacturer is desirable.

Registry Management Specialist

A specialist with about 10 years experience with the management of modern registry systems for vehicles and drivers and related business procedures and technology. Extensive experience working at a senior management level in a national registry is essential. Previous experience working with a national registry in a developing or transitional country is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Project policy reviews**

Sample component 3

Regulations and Procedures for Managing Commercial Driver Health and Safety

Objectives

The objectives of the required technical assistance services are to:

- Review regulations and procedures for managing commercial driver health and safety, including fatigue, drugged driving and other road risk issues.
- Recommend and support improvements to safety regulations and procedures for managing commercial driver health and safety.
- Train police, Ministry of Health and commercial operator staff in the implementation and management of improved commercial driver health and safety regulations and procedures.
- Support the preparation of a (national) post-project program to upgrade safety regulations and procedures for managing commercial driver health and safety.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Review and improve current regulations and procedures for managing commercial driver health and safety.*

Outputs

- i. International good practice benchmarking of current commercial driver health and safety practices.
- ii. Identification of commercial driver health and safety priorities.
- iii. Recommended short-term and long-term improvements to current and planned safety regulations and procedures for managing commercial driver health and safety (including fatigue and drug enforcement programs, to support police enforcement and related publicity and awareness campaigns components), and action plan for improvement program.
- iv. On-the job support to the commercial driver health and safety improvement program.

- (b) *Train police, regulatory agency and commercial operator staff in improved commercial driver health and safety practices.*

Outputs

- i. Preparation and delivery of commercial driver health and safety training programs.

- (c) *Prepare a (national) post-project program and guidelines for commercial driver health and safety.*

Outputs

- i. Post-project program for commercial driver health and safety, including program cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved regulations and procedures for managing commercial driver health and safety.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Support the review safety regulations and procedures for managing commercial driver health and safety and implementation of recommended improvements and related staff training.
- Final year of project: Prepare a post-project program and guidelines for managing commercial driver health and safety network-wide.

Professional skills and experience required

Safety Legislation Specialist

A specialist with about 10 years experience in transport sector legislation, with specific knowledge of traffic safety legislation and sanctions in a national policing jurisdiction. Knowledge of international legislative developments in general deterrence enforcement models is essential. Previous experience with road safety legislation in developing or transitional countries is desirable.

Commercial Vehicle Safety Specialist

A specialist with about 10 years experience in the area of commercial vehicle driver health and safety and commercial vehicle safety standards. Extensive experience working with commercial transport operators in the provision of safety assurance programs and related training is essential.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Technical assistance for **Project policy reviews**

Sample component 4

Road Safety Penalties and Related Management Systems

Objectives

The objectives of the required technical assistance services are to:

- Review road safety penalties and related management systems.
- Recommend and support improvements to better align penalties for unsafe behavior and practices with road safety risks, and to improve the management of fines collection and driver penalty points systems.
- Support the preparation of a (national) post-project program to improve the effectiveness of road safety penalties and related management systems.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Review and improve current road safety penalties and related management systems.*

Outputs

- i. International good practice benchmarking of current road safety legislation and the alignment of current penalties with road safety risks.
- ii. International good practice benchmarking of effectiveness of administrative penalties, fines collections procedures, driver penalty points system, rehabilitation of serious repeat offenders, legislative drafting procedures, etc.
- iii. Recommended short-term and long-term improvements to current and planned road safety legislation, penalty structures, and related management systems, and action plan for improvement program.
- iv. On-the-job support to the implementation of improved road safety penalties and related management systems.

(b) *Prepare a (national) post-project legislative and management reform program and guidelines.*

Outputs

- i. Post-project program for legislative and management reform, including cost estimates and implementation schedule.
- ii. Guidelines detailing requirements for improved road safety legislation, penalty structures and related management systems.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Review current road safety penalties and related management systems, recommend short and long-term improvements, and support implementation of recommendations.
- Final year of project: Prepare a (national) post-project legislative and management reform program and guidelines.

Professional skills and experience required

Safety Legislation Specialist

A specialist with about 10 years experience in transport sector legislation, with specific knowledge of traffic safety legislation and sanctions in a national policing jurisdiction. Knowledge of international legislative developments in general deterrence enforcement models is essential. Previous experience with road safety legislation in developing or transitional countries is desirable.

Enforcement Operations Specialist

A specialist with about 10 years policing experience, including the line-management of traffic enforcement staff. Practical experience in the design, implementation and management of road safety enforcement strategies in a national Police agency operating a successful general deterrence model is essential. A demonstrated ability to communicate road safety enforcement philosophy and tactics to a broad audience is also essential. Previous experience in a law enforcement training facility is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Project management

Technical assistance for **Project management**

Sample component 1

Project Management Support

Objectives

The objectives of the required technical assistance services are to:

- Support the management of the demonstration projects in targeted high-risk corridors, related monitoring and evaluation, and policy reviews.
- Train agency project management staff in good practice management structures and processes.
- Support the preparation of a post-project program of network-wide activities, based on the evaluation findings for all components in the road safety project.

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Review and improve project agency management structures and processes in the high-risk corridors and areas (and control corridors and areas).*

Outputs

- i. International good practice benchmarking of strategic management structures and processes in high-risk corridors and areas (and control corridors and areas), including results focus, coordination and monitoring and evaluation functions.
- ii. Recommended improvements to results focus, coordination and monitoring and evaluation functions, to improve the efficient and effective delivery of interventions in the high-risk corridors and areas (and control corridors and areas).
- iii. On-the-job support to the implementation of improved strategic management structures and processes in the high-risk corridors and areas (and control corridors and areas).

- (b) *Train agency staff in good practice strategic management structures and processes in the high-risk corridors and areas (and control corridors and areas).*

Outputs

- i. Preparation and delivery of strategic management training programs, including case studies of international good practice in road management.
 - ii. Organization and conduct of international good practice study tours (where relevant).
- (c) *Prepare post-project program of network-wide activities based on the evaluation findings for all components in the road safety project.*

Outputs

- i. Post-project program of network-wide road safety activities.
- ii. Targets for reductions and deaths and injuries resulting from the implementation of the post-project program network-wide.
- iii. Guidelines for implementation of post-project program network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Review management structures and processes, prepare and deliver training programs, and support the implementation of measures to improve project management structures and processes in the high-risk corridors and areas (and control corridors and areas).
- Final year of project: Assist the preparation of a post-project program of network-wide road safety activities, related targets and implementation guidelines.

Professional skills and experience required

Safety Management Specialist

Internationally recognized road safety management specialist with about 10 years experience in the development and implementation of national road safety strategies. Demonstrated success in working with wide range of safety-related government agencies is essential.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Project monitoring and evaluation

Technical assistance for **Project monitoring and evaluation**

Sample component 1

Monitoring and Evaluation Systems

Objectives

The objectives of the required technical assistance services are to:

- Support the establishment of project monitoring and evaluation systems in high-risk corridors and areas (and control corridors and areas).
- Train monitoring and evaluation agency staff, and associated national consultants, in the implementation and management of the monitoring and evaluation systems in high-risk corridors and areas (and control corridors and areas).
- Support the preparation of a (national) post-project program for the establishment of a network-wide monitoring and evaluation system, based on successful experience in the high-risk corridors and areas (and control corridors and areas).

Outputs

The outputs of the required technical assistance services are as follows:

- (a) *Design and support project monitoring and evaluation systems for the high-risk corridors and areas (and control corridors and areas).*

Outputs

- i. Specification of road safety performance measures in the high-risk corridors and areas (and control corridors and areas) to monitor risk exposure and road network characteristics, final safety outcomes, intermediate safety outcomes, and intervention outputs, plus sampling frames for the surveys required to monitor identified measures, quarterly and annual reporting procedures and formats, and evaluation procedures to assess effectiveness of interventions.
- ii. Conduct of baseline surveys in the high-risk corridors and areas (and control corridors and areas).
- iii. Specification and costing of survey equipment, data processing and storage system, and staffing requirements.
- iv. Draft bidding documents for the procurement of required survey equipment and data processing and storage systems.
- v. Procedural guidelines for the conduct of surveys, data processing and quarterly and annual reporting.

- vi. Identification of suppliers of data surveying services with sufficient capacity to undertake monitoring programs in high-risk corridors and areas (and control corridors and areas).
 - vii. Draft bidding documents for the procurement of required data surveying services.
 - viii. On-the-job support to the baseline and ongoing data surveys; data processing, storage and analysis; and the preparation of quarterly and annual performance reports.
 - ix. Review (and adjustment) of project results indicators, using the baseline measures and the first 12 months of survey data.
- (b) *Train monitoring and evaluation agency staff and associated national consulting company staff, in monitoring and evaluation systems.*

Outputs

- i. Preparation and delivery of basic and advanced training programs in the implementation and management of monitoring and evaluation systems.
- (c) *Evaluate the efficiency and effectiveness of the monitoring and evaluation systems in the high-risk corridors and areas (and control corridors and areas).*

Outputs

- i. Design and conduct of monitoring and evaluation system review.
 - ii. Revision of monitoring and evaluation procedures (to be fed back into procedures developed in (a) i above) based on the review findings in high-risk corridors and areas (and control corridors and areas).
- (d) *Prepare (national) post-project program and guidelines for the establishment of a network-wide monitoring and evaluation system.*

Outputs

- i. Post-project, network-wide monitoring and evaluation program, including sampling frames for surveys of identified performance measures, program cost estimates and implementation schedule.
- ii. Guidelines for data surveys, data processing and storage, reporting of results, and performance evaluation network-wide.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Design and support the implementation, evaluation and revision of monitoring and evaluation systems in the high-risk corridors and areas (and control corridors and areas), and related staff training.
- Final year of project: Prepare a (national) post-project program and guidelines for the monitoring and evaluation of safety performance network-wide.

Professional skills and experience required

Monitoring and Evaluation Specialist(s)

One or more specialists with about 10 years experience in the design and implementation of traffic, vehicle and road user monitoring and evaluation systems in the road environment. Knowledge of sample design methods and related measurement equipment requirements is required. Experience of road safety monitoring and evaluation in developing and transitional countries is desirable.

Safety Analysis Specialist

An internationally recognized specialist with about 10 years experience conducting scientific analyses of road environment, vehicle and human factors contributing to road crashes and injuries. Hands-on experience of quantitative evaluations of safety interventions and outcomes is essential. Experience of road safety analyses in developing and transitional countries is desirable.

Community Survey Specialist.

A specialist with about 10 year's market research experience of quantitative and qualitative community attitude surveys. Experience of conducting community attitude surveys in developing and transitional countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Support from the International Road Traffic Accident Database Group (IRTAD)

IRTAD support is recommended for the delivery of these outputs.

Technical assistance for **Project monitoring and evaluation**

Sample component 2

Road Crash Data and Analysis System

Objectives

The objectives of the required technical assistance are to:

- Support the evaluation and upgrading of the (national) road crash and data analysis system.
- Train system users in diagnostic techniques and system applications.
- Support the preparation of a (national) post-project system upgrade program.

Outputs

The outputs of the required technical assistance services are as follows:

(a) *Review and improve current system capability.*

Outputs

- i. Specification of the crash data requirements of all agencies engaged in the improvement of road safety.
- ii. Evaluation of current and planned procedures and systems for reporting, recording and analyzing road crashes and the extent to which they meet specified agency requirements.
- iii. Recommended improvements to current and planned procedures for reporting, recording and analyzing road crashes.
- iv. Concept plan for improving the system, including recommended hardware and software requirements with preliminary costings and all related user documentation and training needs.
- v. Recommended process to coordinate activities with project monitoring and evaluation component to ensure crash analysis tools and procedures developed for road infrastructure safety improvements are prototyped and tested with agency users in the high-risk corridors and areas (and control corridors and areas).
- vi. Draft documents for the procurement of the information technology services and equipment, in accordance with best practice bidding procedures for complex IT system developments.
- vii. On-the-job support to the system development and implementation process.

(

- b) *Train agency staff in diagnostic techniques and system applications, and police staff in basic data entry requirements.*

Outputs

- i. Preparation and delivery of training programs in diagnostic techniques and system applications, and in basic data entry requirements.

- (c) *Prepare a (national) post-project program for further system development.*

Outputs

- i. Post-project system upgrade program, including prioritized user features and program cost estimates and implementation schedule.

Scheduling of tasks

The scheduling of the required technical assistance services is as follows:

- Duration of project: Undertake review of current system capability and support the formulation of upgraded system requirements, procurement of services and equipment for system development and system implementation, and train agency and police staff in system support and use.
- Final year of project: Prepare post-project program for further system development.

Professional skills and experience required

Crash Data Base Specialist

An IT specialist with about 10 years of road safety experience, especially with accident information systems including Microsoft Windows, SQL type databases and GIS development. Experience with training of system users is essential. Experience with crash databases in developing and transitional countries is desirable.

IT Project Management Specialist

A specialist with about 10 years experience in managing complex information technology (IT) projects, across a range of public sector agencies and levels of administration. Experience with crash analysis systems and the administration and management of institutions related to the road sector is desirable. Experience with the management of complex IT projects in developing and transitional countries is preferred.

Database Specialist

A specialist with at least 5 years experience in the establishment, management and maintenance of database systems. A strong background in information technology and database developments and ideally experience in establishing road safety performance monitoring systems is essential. Experience of database applications in developing and transitional countries is desirable.

Safety Analysis Specialist

An internationally recognized specialist with about 10 years experience conducting scientific analyses of road environment, vehicle and human factors contributing to road crashes and injuries. Hands-on experience of quantitative evaluations of safety interventions and outcomes is essential. Experience of road safety analyses in developing and transitional countries is desirable.

For all team members, a demonstrated ability to work with and gain the trust of senior government officials and professional peers is essential.

Support from the International Road Traffic Accident Database Group (IRTAD)

IRTAD support is recommended for the delivery of these outputs.

Road Safety Management Capacity Reviews and Safe System Projects Guidelines

This updated edition of the Road Safety Management Capacity Reviews and Safe System Projects Guidelines supports the identification and preparation of road safety investment strategies and implementation projects in low and middle-income countries aimed at achieving the ambitious Decade of Action goal to save five million lives and avoid 50 million serious injuries by 2020. In shifting from advocacy to action accelerated knowledge transfer aligned with scaled-up road safety investment will be central to overcoming country capacity weaknesses which in the face of sustained economic growth and rapid motorization present a formidable barrier to success. The core guidelines and streamlined approach provided in the updated edition specify proven, pragmatic tools to help overcome this barrier and contribute to improved road safety results. It is anticipated that the guidelines will be increasingly used over the coming Decade and further updated when appropriate to reflect lessons learned in their application and improvements made.



1818 H Street, NW • Washington, DC • 20433 • USA
worldbank.org/GRSF