

LES NOUVEAUX GUIDES EN SÉCURITÉ ROUTIÈRE DE L'AIPCR



21E ÉDITION INFRA 2015
CENTRE DES CONGRÈS DE QUÉBEC – MERCREDI 2 DÉCEMBRE 2015
PRÉSENTÉE PAR DANIEL AUBIN ING. DIRECTEUR DE PROJET SENIOR,
MEMBRE DE L'AIPCR C T 3.2 « DES INFRASTRUCTURES PLUS SURES »

SÉCURITÉ ROUTIÈRE



MMM GROUP

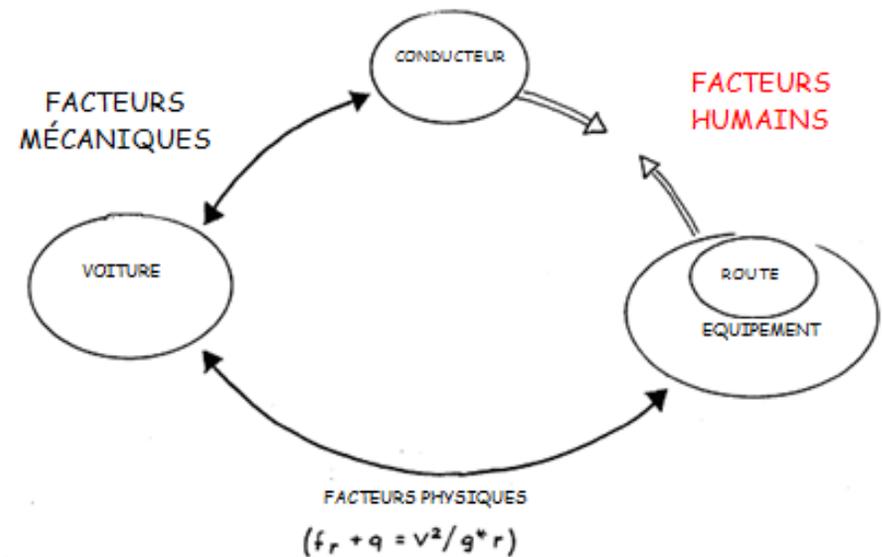
INTRODUCTION

- 1 NOUVEAU GUIDE DES FACTEURS HUMAINS**
- 2 NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS**
- 3 NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE**
- 4 CONCLUSION ET RECOMMANDATIONS**

NOUVEAU GUIDE DES FACTEURS HUMAINS



GUIDE DE FACTEURS HUMAINS POUR UNE INTERFACE HOMME-ROUTE PLUS SÛRE



NOUVEAU GUIDE DES FACTEURS HUMAINS

- Une meilleure utilisation des termes usuels en ingénierie routière
- Une définition plus adaptée du terme « facteurs humains »
- De nouvelles figures à titre d'exemples
- Des nouveaux sujets qui complètent les facteurs humains

NOUVEAU GUIDE DES FACTEURS HUMAINS

Une définition plus adaptée du terme « facteurs humains »

Facteurs Humains :

- **Inclut :** valeurs-seuils psychologique/physiologiques qui contribuent aux événements dommageables
- **Exclut :** les états psychiques/physiques temporaires (intoxication, chute de tension artérielle, crise cardiaque, alcool, attaque de panique, dépression, âge)
- **Objectif :** identification des caractéristiques de la route qui ne sont pas d'après les valeurs limites humaines et, par conséquent, déclenchent des accidents

NOUVEAU GUIDE DES FACTEURS HUMAINS

De nouvelles figures à titre d'exemples



Fig. 20: Déstabilisation par une suspension non orthogonale et asymétrique : l'équilibre est perturbé aux usagers dépendants du champ de vision qui ont tendance à dévier vers la droite (16)

NOUVEAU GUIDE DES FACTEURS HUMAINS

De nouvelles figures à titre d'exemples



Fig. 28: Exemple de bonne pratique du Danemark : champ d'espace bien structuré avec des lignes de référence claires (3)

NOUVEAU GUIDE DES FACTEURS HUMAINS

De nouvelles figures à titre d'exemples



Fig. 6: Illusion de distance involontaire à le point d'un accident aux Pays-Bas : barrières de sécurité est dévié tout à coup vers la gauche (4)

NOUVEAU GUIDE DES FACTEURS HUMAINS

De nouvelles figures à titre d'exemples



Fig. 7: Illusion de perspective : pendant la nuit la signalisation peut donner des attentes erronées en matière de direction de la courbe
→ première impression à gauche, puis à droite (6)

NOUVEAU GUIDE DES FACTEURS HUMAINS

Des nouveaux sujets qui complètent les facteurs humains

LE PHÉNOMÈNE DE GAUCHE

Les mouvements dans le sens antihoraire sont souvent beaucoup plus faciles pour les mammifères, donc aussi pour les humains. Se déplacer dans le sens horaire causes vertiges, trébuchant, envie d'orientation améliorée, basse vitesse et hésitations dans le mouvement.

Le phénomène de gauche explique pourquoi les courbes de droite sont plus difficiles pour les conducteurs. Pour les concepteurs de la route, cela signifie que les difficultés à conduire à travers une courbe sont encore plus cruciales pour les courbes à droite.

Des nouveaux sujets qui complètent les facteurs humains

7. Lacunes dans le planning des agglomérations

Agglomérations divisés créent des problèmes de sécurité avec des traversées inattendus par les usagers vulnérables.

Les caractéristiques suivantes de la route sont à éviter :

- agglomérations divisées avec une infrastructure divisée par la route
- habitudes de croisement des usagers pas investiguées avant la planification de la route
- difficulté augmentée aux usagers vulnérables pour traverser la route:
 - passages séparés de plus de 200m
 - passages dénivelés
 - utilisation d'ouvrages d'art ou tunnels au lieu d'élever la route
- Si les passages ne sont pas possibles : clôtures ou autres barrières fonctionnent comme barrières et maximisent l'effort pour les usagers vulnérables à traverser la route

NOUVEAU GUIDE DES FACTEURS HUMAINS

Des nouveaux sujets qui complètent les facteurs humains



Fig. 63: Agglomération divisé par une route : croisements habituels des usagers sont négligées (16)

NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

www.piarc.org
2013R07EN
Cycle 2004-2007

	HEAD ON	CUTTING IN OR CHANGING LANE TO LEFT	LOST CONTROL OVER TAKING (VEHICLE)	SIDE ROAD	LOST CONTROL OVERTAKING (VEHICLE)	SWAYING IN HEAVY TRAFFIC	OTHER
	ON STRAIGHT	CUTTING CORNER	SWAYING WIDE	WITH OR UNKNOWN	LOST CONTROL ON STRAIGHT	LOST CONTROL ON CURVE	OTHER
	LOSS OF CONTROL OR OFF ROAD (STRAIGHT ROADS)	OUT OF CONTROL ON ROADWAY	OFF ROADWAY TO LEFT	OFF ROADWAY TO RIGHT			OTHER
	CORNERING	LOST CONTROL TURNING RIGHT	LOST CONTROL TURNING LEFT	WISSELS INTERSECTION OR END OF ROAD			OTHER
	COLLISION WITH OBSTRUCTION	PARKED VEHICLE	CRASH OR BROKEN DOWN	NON-VEHICULAR OBSTRUCTIONS (INCLUDING ANIMALS)	WORKING VEHICLE	OPENING DOOR	OTHER
	REAR END	SLOW VEHICLE	CROSS TRAFFIC	PEDESTRIAN	QUEUE	SIGNALS	OTHER
	TURNING VERSUS SAME DIRECTION	SPACE OF LEFT TURNING VEHICLE	LEFT TURN SIDE SIDE SWIPE	STOPPED ON TURNING FROM LEFT STOP	REAR CENTER LANE	OVERTAKING VEHICLE	TWO TURNING
	CROSSING (NO TURNS)	RIGHT ANGLE (90° TO 135°)					OTHER
	CROSSING (VEHICLE TURNING)	RIGHT TURN RIGHT SIDE					OTHER
	MERGING	LEFT TURN ON					OTHER
	RIGHT TURN AGAINST	STOPPED WAITING TO TURN	MAKING TURN				OTHER
	MANOEUVRING	PARKING OR LEAVING	U-TURN	U-TURN	DRIVEWAY MANOEUVRE	WAKING OPPOSITE	ENTERING OR LEAVING
	PEDESTRIANS CROSSING ROAD	LEFT SIDE	RIGHT SIDE	LEFT TURN LEFT SIDE	RIGHT TURN RIGHT SIDE	LEFT TURN RIGHT SIDE	RIGHT SIDE
	PEDESTRIANS OTHER	WALKING WITH SUBCIC	WALKING FACING TRAFFIC	WALKING ON/TOUCHING	CHILD PLAYING (TRICYCLE)		
	MISCELLANEOUS	TRUCK FALLS FROM ROADWAY OR ALIGHTING	TRUCK FALLS FROM MOVING VEHICLE				

ROAD ACCIDENT INVESTIGATION GUIDELINES FOR ROAD ENGINEERS

Technical Committee 3.1 – Road Safety

WORLD ROAD ASSOCIATION MONDIALE DE LA ROUTE

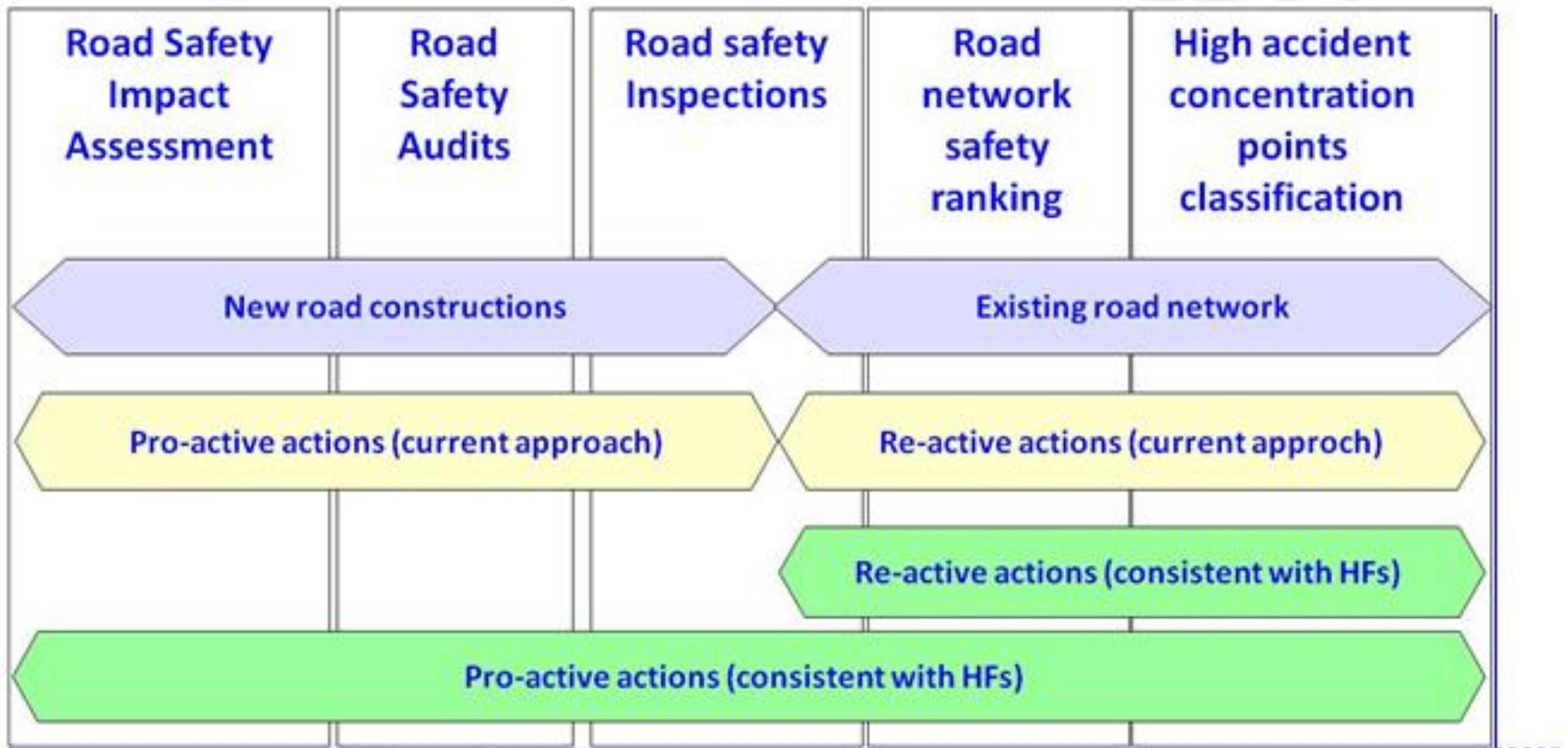
Road Safety Investigation Guidelines

NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

- Une approche différente de la version initiale
- L'intégration des facteurs humains dans les méthodes d'analyse des accidents
- Un processus de gestion des données minimales.

NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

Une approche différente de la version initiale



Une approche différente de la version initiale

As far as different countries, as well as different administrations and designers within a country, have different level of expertise and different data availability, the data collection and storing system need to be structured with different possible application levels. The hierarchical or progressive approach suggested in Chp. 1 allows the most possible flexibility in application:

- Type A → minimum set of data is available
- Type B → intermediate level data is available
- Type C → very detailed data is available

The more detailed the available data are, the higher will be the reliability of the performed analysis. **Each level of data allows to implement the road network screening activities and identify the high risk concentration sections.**

As far as the crash severity is concerned, the **analysis at each level requires the availability of the knowledge of both severe (fatalities and injury) and property damage only (PDO) crashes.**

The introduction of the preventing HF approach in the safety road classification process requires the minimum set of data required by the Type A approach.

NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

Une approche différente de la version initiale

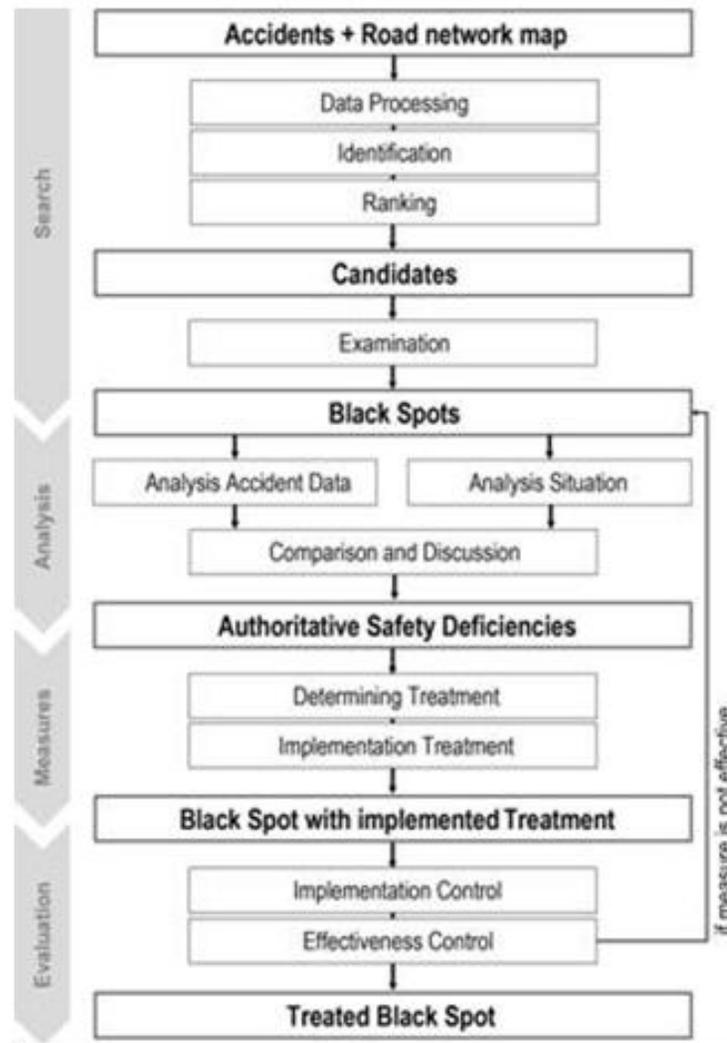


Figure 2: process overview for the black spot management (source: Swiss standard VSS SNR 641 72).

NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

L'intégration des facteurs humains dans les méthodes d'analyse des accidents

Méthode d'analyse FH

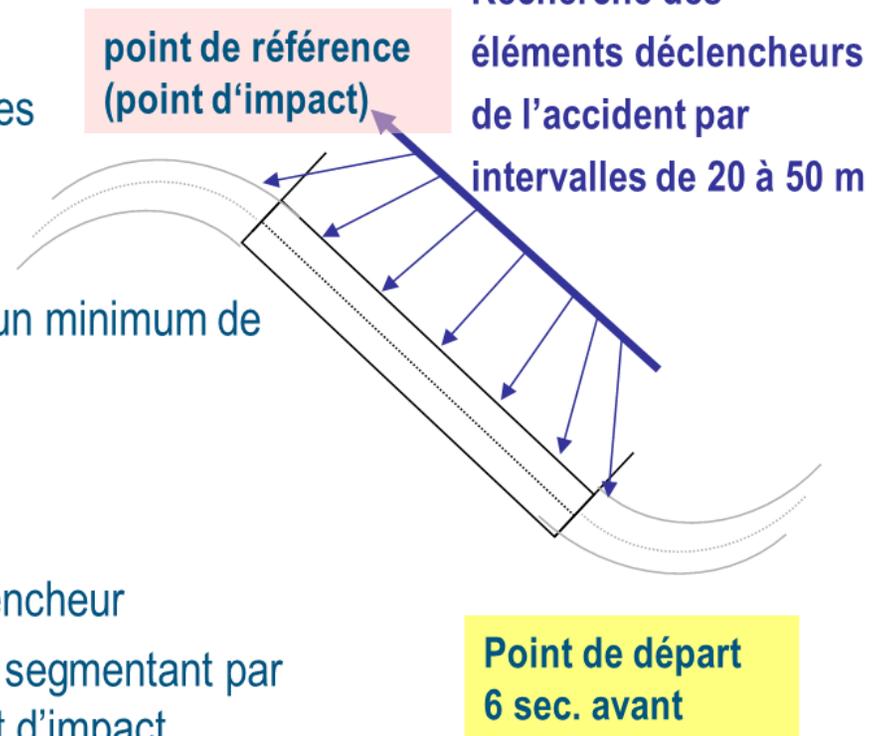
Identification des incidents ou d'accidents?

Essayer de trouver le déclencheur d'accident = **incident**

→ 1. Irrégularités ou changements dans les fonctions ou caractéristiques routières

→ 2. Point critique, est-il clair et visible à un minimum de 6 sec. sur chaque approche?

→ 3. Évaluation de l'élément routier déclencheur (incidents): commencement à 6 sec. et en segmentant par intervalles de 20 à 50 m jusqu'au point d'impact



NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

L'intégration des facteurs humains dans les méthodes d'analyse des accidents

- Améliorer notre connaissance relié aux éléments déclencheurs
- Développer le concept de l'influence de l'environnement spatial sur le conducteur pour l'analyse des accidents
- Compléter le formulaire d'accidents sur certains points
- Associer les principes des FH avec les concepts des erreurs humaines
- Utilisation de la liste de vérification autant pour les audits que pour les analyses de sites accidentogènes.

NOUVEAU GUIDE POUR LES ANALYSES D'ACCIDENTS

Un processus de gestion des données minimales.

ID	DATA	ACTIVITY		
		NATIONAL STATISTICS	ROAD SAFETY RANKING	COUNTERMEASURES IDENTIFICATION
<u>Crash data</u>				
1.	Date and time of the day	X	X	X
2.	Location (coordinates)	X	X	X
3.	Severity	X	X	X
4.	Crash description (textual and sketch)	X	X	X
<u>Data about the crash involved drivers</u>				
5.	Driver's impairments	X	X	X
<u>Traffic data</u>				
	None			
<u>Road network characteristics</u>				
6.	Type of road	X	X	X
7.	Map of the Road network			
<u>Road environment data</u>				
	None			
<u>Meteo data</u>				
	None			
<u>Historical data concerning maintenance interventions</u>				
	None			
<u>Additional data</u>				
	(see PIARC Road accident Investigation Guideline for road engineer page 13)	X		

NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

DEVIENDRA



PIARC Road Safety Manual (2nd Ed)

A manual for practitioners and decision makers on implementing Safe System infrastructure

NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

- Un document Web plus facile d'accès et à mettre à jour

Au lien suivant: <http://roadsafety.piarc.org/en>

- Une nouvelle structure de chapitres en 3 parties
- Un outil pour les gestionnaires de tous les pays

NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE



ROAD SAFETY MANUAL
A MANUAL FOR PRACTITIONERS AND DECISION MAKERS
ON IMPLEMENTING SAFE SYSTEM INFRASTRUCTURE

INTRODUCTION

STRATEGIC GLOBAL
PERSPECTIVE

ROAD SAFETY
MANAGEMENT

PLANNING, DESIGN
& OPERATION

TOOLS

WELCOME TO THIS WORLD ROAD ASSOCIATION GUIDE

THE NEW ROAD SAFETY MANUAL (RSM) IS DESIGNED TO HELP COUNTRIES AT EVERY STAGE OF INFRASTRUCTURE DEVELOPMENT TO FULFILL ROAD SAFETY OBJECTIVES.

It is aligned with key pillars for the [United Nations Decade of Action for Road Safety 2011-2020](#):

- **Pillar 1:** Road Safety Management;
- **Pillar 2:** Safer Roads and Mobility;
- **Pillar 4:** Safer Road Users.

This comprehensive resource builds on the broad range of knowledge and experience provided by PIARC in the [first edition](#). It includes new thinking on road safety and offers a clear argument on why adopting a Safe System approach is crucial for your country.

The Safe System approach aims for a more forgiving road system that takes human fallibility and vulnerability into account. Under the Safe System approach, everyone (public agencies, automobile manufacturers, road users, enforcement officials, and others) must share the responsibility for road safety outcomes.

The manual is split into three parts and can be downloaded in chapters.

Key principles for each of the topics are included and discussed in the sections, with case studies and links to detailed technical material and other references.

STRUCTURE OF THE ROAD SAFETY MANUAL



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NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

INTRODUCTION

STRATEGIC GLOBAL
PERSPECTIVE

ROAD SAFETY
MANAGEMENT

PLANNING, DESIGN
& OPERATION

TOOLS

HOW TO USE THE MANUAL

PREAMBLE

THIS WORLD ROAD ASSOCIATION

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NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

INTRODUCTION

STRATEGIC GLOBAL PERSPECTIVE

ROAD SAFETY MANAGEMENT

PLANNING, DESIGN & OPERATION

TOOLS



SCOPE OF ROAD SAFETY PROBLEM

INTRODUCTION

IMPACT ON PUBLIC HEALTH

SOCIO-ECONOMIC COSTS

ROAD SAFETY CONTEXT

REFERENCES

KEY DEVELOPMENTS

INTRODUCTION

DEVELOPMENT PRIORITY

UN DECADE OF ACTION

SHIFT TO SAFE SYSTEM

GOVERNMENT LEADERSHIP

BUILDING MANAGEMENT CAPACITY

REFERENCES

ATION

COUNTRIES AT L ROAD SAFETY

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Figure 1. Safe road users.

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INTRODUCTION	STRATEGIC GLOBAL PERSPECTIVE	ROAD SAFETY MANAGEMENT	PLANNING, DESIGN & OPERATION	TOOLS
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SAFETY MANAGEMENT SYSTEM

INTRODUCTION
 FRAMEWORK AND TOOLS
 REFERENCES

SAFE SYSTEM APPROACH

INTRODUCTION
 CURRENT TRANSPORT SYSTEM
 LONG-TERM GOAL
 CRASH CAUSES
 SAFE SYSTEM RESPONSIBILITY
 SAFE SYSTEM PRINCIPLES
 SAFE SYSTEM ELEMENTS
 SAFE SYSTEM IMPLEMENTATION
 REFERENCES

SAFETY DATA

INTRODUCTION
 IDENTIFY DATA REQUIREMENTS
 CRASH DATA SYSTEMS
 NON-CRASH DATA SYSTEMS
 QUALITY AND UNDER-REPORTING
 DATA ANALYSIS
 INTEGRATING DATA
 REFERENCES

TARGETS AND STRATEGIC PLANS

INTRODUCTION
 TIMEFRAMES
 CAPACITY TO DELIVER TARGETS
 ASSESSING SAFETY PROBLEMS
 PLAN IMPLEMENTATION
 SETTING TARGETS
 PERFORMANCE INDICATORS
 MEETING TARGETS
 REFERENCES

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NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

INTRODUCTION

STRATEGIC GLOBAL PERSPECTIVE

ROAD SAFETY MANAGEMENT

PLANNING, DESIGN & OPERATION

TOOLS

RESPONSIBILITIES AND POLICY

INTRODUCTION
ROAD AUTHORITY ROLES
SAFE SYSTEM IMPACTS
GOALS & OPERATIONAL PRACTICE
DELIVERING PROGRAMMES
REFERENCES

INTERVENTION SELECTION

INTRODUCTION
PROJECT & NETWORK APPROACHES
INTERVENTION SELECTION
PRIORITISATION & ASSESSMENT
REFERENCES

DESIGNING FOR ROAD USERS

INTRODUCTION
DESIGNING FOR SAFE BEHAVIOUR
ENCOURAGING SAFE BEHAVIOUR
ENSURING APPLICATION
REFERENCES

MONITORING AND EVALUATION

INTRODUCTION
IMPORTANCE OF MONITORING
EVALUATING TARGETS
EVALUATING INTERVENTIONS
REFERENCES

INFRASTRUCTURE MANAGEMENT

INTRODUCTION
GENERAL PRINCIPLES
POLICIES AND STANDARDS
MANAGEMENT TOOLS
REFERENCES

RISK & ISSUE IDENTIFICATION

INTRODUCTION
PROGRAMME & PROJECT APPROACH
CRASH DATA IDENTIFICATION
PROACTIVE IDENTIFICATION
COMBINING CRASH & ROAD DATA
REFERENCES

Key principles for each of the topics are included and discussed in the sections, with case studies and links to detailed technical material and other references.

STRUCTURE OF THE ROAD SAFETY MANUAL



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8. Design for Road user Characteristics and Compliance

Key messages

- Human factors is a well-established scientific endeavour. Many of its findings are incorporated into road design standards for various countries.
- Roads should be designed and managed to take account of human factors, otherwise it is unlikely that a Safe System can be achieved.
- Speed management is a key step towards creating a Safe System. Speeds are the result of choices made by road users but they can be heavily influenced by the design of roads and the provision of signs and markings.
- A skillful combination of design elements can create 'self-explaining' roads where appropriate actions, including speed choice, are obvious to road users. Self-explaining roads lead road users to behave in a way that road planners and designers expect, thereby resulting in low crash rates.
- In addition to road design, a range of techniques for directly influencing road user behaviour should be used, including education, publicity and enforcement.
- Good practice in each of the above areas is now well-understood, and guides to good practice are available.

› DECISION
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all countries in
management of
road network in
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Use of the Road

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NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

INTRODUCTION

STRATEGIC GLOBAL
PERSPECTIVE

ROAD SAFETY
MANAGEMENT

PLANNING, DESIGN
& OPERATION

TOOLS

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SEARCH

SEARCH RESULTS

GOALS & OPERATIONAL PRACTICE

THEME(S): PLANNING, DESIGN & OPERATION

Thursday 24th September 2015

... rules. The City of Abu Dhabi has worked to develop **urban** design guidelines for application across the **urban** streets of the city to improve sustainable safety and amenity for ...

POLICIES AND STANDARDS

THEME(S): PLANNING, DESIGN & OPERATION

Monday 28th September 2015

... targeted on high crash density demonstration corridors and **urban** areas. The value of this demonstration corridor approach has been ... accountability among road authorities, road engineers and **urban** planners; promote the needs of all road users as part of sustainable ...

REFERENCES

THEME(S): PLANNING, DESIGN & OPERATION

Monday 28th September 2015

... Washington D.C. Certu, 2008, Transportation Safety in **Urban** Area: Methodological guide, Certu, Lyon, France. Croft, P, Tziotis, ... Jurewicz, C, (2009) STARS: a risk-based road safety tool for **urban** planners, Australasian Road Safety Research Policing Education ...

CRASH CAUSES

THEME(S): ROAD SAFETY MANAGEMENT

Wednesday 09th September 2015

... crashes (particularly side impact) (most often on **urban** roads), crashes involving vehicles and vulnerable road users ... include: pedestrian/vehicle crashes (most often on **urban** roads and within sections of linear **urban** development); motorcyclist ...

MEETING TARGETS

THEME(S): ROAD SAFETY MANAGEMENT

Thursday 24th September 2015

... treatment for a substantial higher risk corridor or **urban** area plus selected national policy reviews. This should form the LMIC ... project should treat a high-risk corridor or extensive **urban** area with a complete range of interventions across the road safety ...

NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE



ROAD SAFETY MANAGEMENT

BOX 5.6: CASE STUDY - SWEDISH TRAFFIC ACCIDENT DATA ACQUISITION (STRADA)

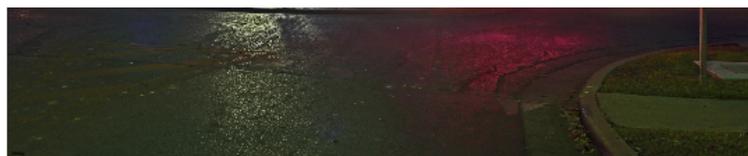
SAFETY MANAGEMENT SYSTEM

Some countries have undertaken in-depth studies of serious crashes to provide a more thorough understanding of crash causation factors and possible solutions. Such studies typically investigate a sample of high severity crashes. As an example, in the UK, the 'On the Spot' project collected detailed and high-quality crash information over two regions. More than 2000 variables were collected for each incident based on scene investigation soon after the crash occurred, as well as follow-up communication with medical services and local government. The information was analysed to provide insight about human involvement, vehicle design, and highway design in crash and injury causation.

has been established, and tools such as an online manual for in-depth road accident investigation (<http://dacota-investigation-manual.eu>).

The US has established the second Strategic Highway Research Program (SHRP2). SHRP2 is perhaps the most comprehensive source of information on factors occurring before and during crashes and near-crash events. The information is contained in the Naturalistic Driving Study (NDS) database. This dataset includes information from over 2300 drivers driving their own vehicles, and through normal driving. The massive amount of data collected through the Roadway Information Database (RID) which includes comprehensive information on road elements and other relevant data (including crash data). This globally significant database is expected to provide the performance and behaviour. More information can be found at

http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Pages/Safety_153.aspx



NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE

INTRODUCTION

STRATEGIC GLOBAL
PERSPECTIVE

ROAD SAFETY
MANAGEMENT

PLANNING, DESIGN
& OPERATION

TOOLS



PLANNING, DESIGN & OPERATION

RESPONSIBILITIES AND POLICY

DESIGNING FOR ROAD USERS

INTRODUCTION

DESIGNING FOR SAFE BEHAVIOR

ENCOURAGING SAFE BEHAVIOR

ENSURING APPLICATION

» REFERENCES

INFRASTRUCTURE MANAGEMENT

RISKS & ISSUE IDENTIFICATION

INTERVENTION SELECTION

MONITORING AND EVALUATION

8.5 REFERENCES

APEC 2011 Motorcycle and Scooter Safety Compendium of Best Practice: Motorcycle lanes (Malaysia). APEC, http://www.apec-tptwg.org.cn/new/Projects/Compendium%20of%20MSS/case_studies/Malaysia_motorcycle_lanes.html viewed Aug 14 2013.

Campbell, JL, Lichty, MG, Brown, JL, Richard, CM, Graving, JS, Graham, J, O'Laughlin, M, Torbic, D & Harwood, D, 2012, *Human Factors Guidelines for Road Systems* (2nd ed.) National Cooperative Highway Research Program, report 600.

Carlsson, A, 2009 *Evaluation of 2+1 roads with cable barriers* rapport 636, VTI; Linköping, Sweden.

Charlton, SG, Mackie, HW, Baas, PH, Meneses, M & Dixon, C, 2010 Using endemic features to create self-explaining roads and reduce vehicle speeds, *Accident and Analysis and Prevention*, 42, pp1989-1998.

Department for Transport, 2007, Traffic Calming: Local Transport Note 1/07, UK Department for Transport, TSO (The Stationery Office), London, UK.

Edquist, J and Corben, B 2012 Potential application of shared space: principles in urban road design: effects on safety and amenity, Monash University Accident Research Centre, report to the NRMA ACT Road Safety Trust.

ETSC, 2011, *Traffic Law Enforcement across the EU: Tackling the Three Main Killers on Europe's Roads*, http://www.etsc.eu/documents/Final_Traffic_Law_Enforcement_in_the_EU.pdf, viewed August 20 2013.

European Commission, no date, Mobility and Transport, Road Safety, Self-explaining Roads, European Commission http://ec.europa.eu/transport/wcm/road_safety/erso/knowledge/Content/15_road/self_explaining_roads.htm, viewed 23 August 2013.

Federal Highways Administration, 2010, Safety Benefits of Walkways, Sidewalks, and Paved Shoulders, Federal Highways Administration, http://safety.fhwa.dot.gov/ped_bike/tools_solve/walkways_brochure/walkways_brochure.pdf, viewed 18th May 2015.

Forbes, TX, 1939, A Method for the Analysis of the Effectiveness of Highway Signs, *Journal of Applied Psychology*, vol 23, pp.669-84.

Hussain, H., Radin Umar, R. S., Ahmad Farhan, M. S., & Dadang, M. M. 2005, **Key components of a motorcycle-traffic system - A study along the motorcycle path in Malaysia.** [PDF] IATSS Research, 29(1):50-56.

Jackson, P; Hilditch, C, Holmes, A, Reed, N, Merat, N & Smith, L, 2011, Fatigue and road safety: a critical analysis of recent evidence, Road Safety Web Publication, NO: 21, Department for Transport, London.

ITE 2013 <http://www.ite.org/traffic/>

Lynam, D. A. and Lawson, S.D., 2005, Potential for risk reductions on British inter-urban major roads. *Traffic Engineering and Control*, Vol 46, # 10, pp 358-361



NOUVEAU MANUEL DE SÉCURITÉ ROUTIÈRE



Home // Road Safety Management // Safety Data // Identify Data Requirements

ROAD SAFETY MANAGEMENT



SAFETY MANAGEMENT SYSTEM

THE SAFE SYSTEM APPROACH

SAFETY DATA

INTRODUCTION

» IDENTIFY DATA REQUIREMENTS

CRASH DATA SYSTEM

NON-CRASH DATA SYSTEM

QUALITY AND UNDER-REPORTING

DATA ANALYSIS

INTEGRATING DATA

REFERENCES

TARGET AND STRATEGIC PLANS

5.2 IDENTIFYING DATA REQUIREMENTS



reading on this topic, particularly for those working within LMICs who wish to establish or improve upon a crash data system. This document suggests a cyclic approach of:

- using data to define problems;
- identifying risk factors and priorities;
- developing strategy;
- setting targets and monitoring performance.

This process is then repeated.

WHO (2010) also provides guidance on the linkage between safety data and effective safety management (Figure), giving a framework for the collection and use of this data. The WHO document makes it clear that crash data alone is not sufficient to manage safety, but rather it must be used in combination with other sources of information. This additional information is required to better interpret risks, thereby assisting in the monitoring of performance and achievement of results.



CONCLUSION ET RECOMMANDATIONS

Conclusions

- Nouveaux guides améliorés
- Intégration des facteurs humains dans les trois nouveaux documents
- Un nouveau Manuel de sécurité routière (MSR) accessible par Internet, la version papier devrait aussi être disponible.

Recommandations

- Ne jetez pas trop vite votre vieux MSR
- Commencez à intégrer et mieux comprendre les facteurs humains
- Les versions françaises des documents devraient suivre rapidement.

Merci beaucoup