



PIARC Guidelines for Road Safety Audits

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PIARC TC 3.1 Outputs

- PIARC Technical Committee 3.1 on Road Safety has focused on Road Safety Audit (RSA)
- RSA Guidelines is an output of TC 3.1 for current cycle (2004-07)
- Informations on current practice and experiences in different countries have been collected, analysed and discussed

What is Road Safety Audit?

- « A formal road safety examination of the road or traffic project, or any other type of project which affects road users, carried out by an independent, qualified auditor or team of auditors who reports on the project accident potential and safety performance for all kinds of road users»

What is Road Safety Audit?

- Systematic process for checking road safety implications of new schemes and highway improvements
 - New motorways to Small local improvements
- Carried out at formal design and post-construction stages
- Requires independent staff with experience of road safety engineering to undertake Safety Audit

What is Road Safety Audit?

- Safety Audit report is a formal document, describing a problem...
 - *“who can be hurt and in what way?”*
- ...and a recommendation
 - *How the risk can be removed or reduced*
- Report is produced for the scheme client
- Client decides how to respond to the recommendations

Costs and benefits of Safety Audit

- Main benefits of RSA are to prevent road users from being injured or killed due to poor road design and avoid the expenditure of money for redesign and reconstruction to improve the situation.
- Some evidence of improvement in design due to a reduction in Safety Audit comments made in reports over time
- Difficult to quantify economic benefits of a process because a before/after accident study is not possible
- Some studies point to quantitative benefits

Costs and benefits of Safety Audit

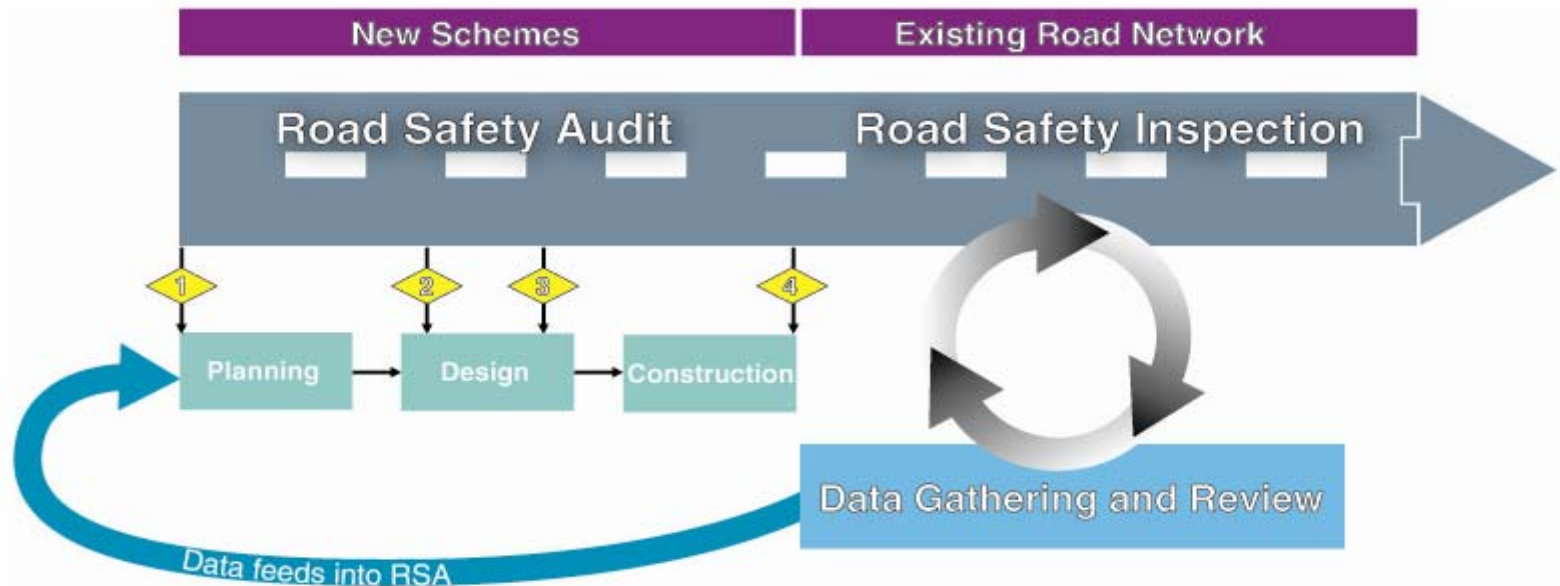
•Costs

- Undertaking the audit
- In order or 0,2 – 0,5 % of the total project cost
- Re-design following early stage audit (1% scheme cost)
- Re-construction following scheme completion (more expensive)

•Benefits

- Surrey CC found savings of 1 casualty per year per site on minor audited schemes
- New Zealand benefit to cost ratio 20:1
- UK Consultant found accidents predicted in audits did occur if scheme left untreated

When should Audits be carried out?



1. Feasibility
2. Preliminary design
3. Detailed design
4. Pre-opening and 5. Post-opening



Supplement to RSA

The RSA Guideline is supplemented by:

- *Guideline for Road Safety Inspection on existing roads*
- *Catalogue of design safety problems and countermeasures*

Safety Audit Process

Commissioning

Ordering the audit



Selecting the team



Collection of background information and Audit Brief



Commencement meeting

Safety Audit Process

Undertaking

Analysis of background information



Site inspections



Audit finding



Written Audit report

Safety Audit Process

Completion

Completion meeting



Written Respond to the audit report (Decision to make changes or not)



Follow up



Checklists

- Different checklists for different stages of a project's development
- To ensure that safety aspects have not been overlooked during the procedure
- Contain detailed questions regarding the safety of all users and they are an aid to make sure that all factors are considered

Checklists

- Inter urban main roads crossing build up areas of towns and villages, **Stage 2 Checklists - Preliminary design**

Function of the road

No.	Question	Yes (✓) No (X)	Comments
0	Have the section been audited at a previous stage, and have the findings been considered?		
1	Have the effects of the project on the surrounding road network been considered?		
2	Do the function of the road and the desired use of the road correspond?		
3	Have previous findings/documents on the accident situation been taken into consideration during the planning phase?		
4	Have specific traffic composition characteristics been taken into consideration?		

Checklists structure

- Eight sections corresponding to the sections detailed in the RSI and the Catalogue:
 - Function
 - Cross Section
 - Alignment
 - Intersections
 - Public and Private Services
 - Vulnerable road users
 - Traffics Signing and Marking
 - Roadside Features

PIARC survey on Road Safety Audit

- **21 highway authorities from around the world: 16 carrying out Safety Audit**
 - 38% have “law or Ministry decision” and 62% are road administration decision
 - 81% have written guidelines
 - 38% have external auditors
 - 68% audits carried out by “safety experts”
 - all requests for safety Audit were derived from roads administrations
 - 81% clients require a formal report

Methodology for developing safety audit

- **Main requirements**
 - Examine current best (relevant) international practice in order to develop guidelines
 - Decide how to train and accredit safety auditors
 - Develop institutional support for the process so that it is sustainable

Methodology for developing safety audit

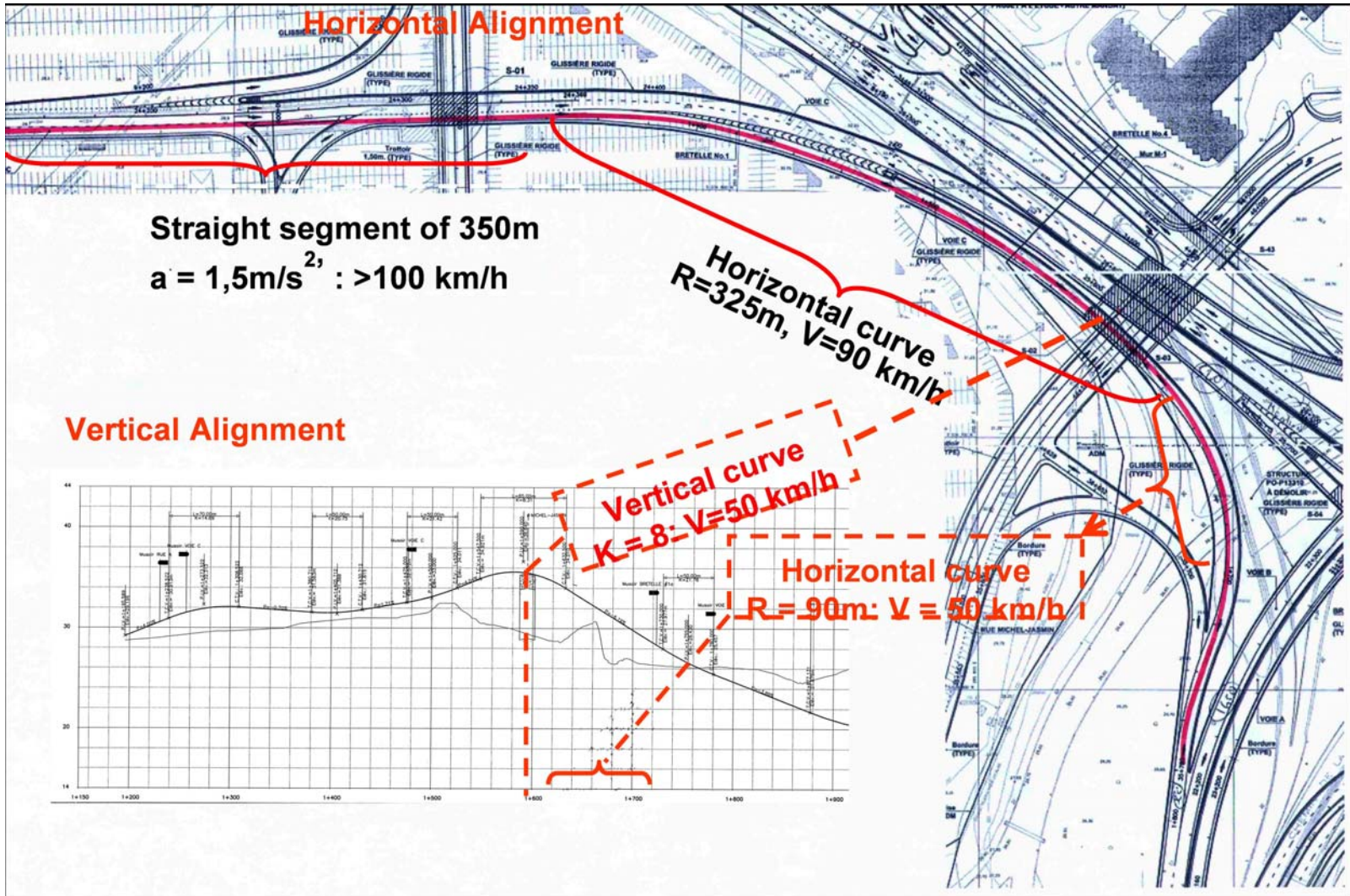
- **Method statement**

- Convene working party including international experts and national stakeholders
- Develop draft safety audit procedure based on best relevant practice
- Adopt procedure within national design standards
- Determine training needs and design appropriate training courses
- Seminars to start process to raise awareness, and to launch procedures
- Install an independent RSA Centre

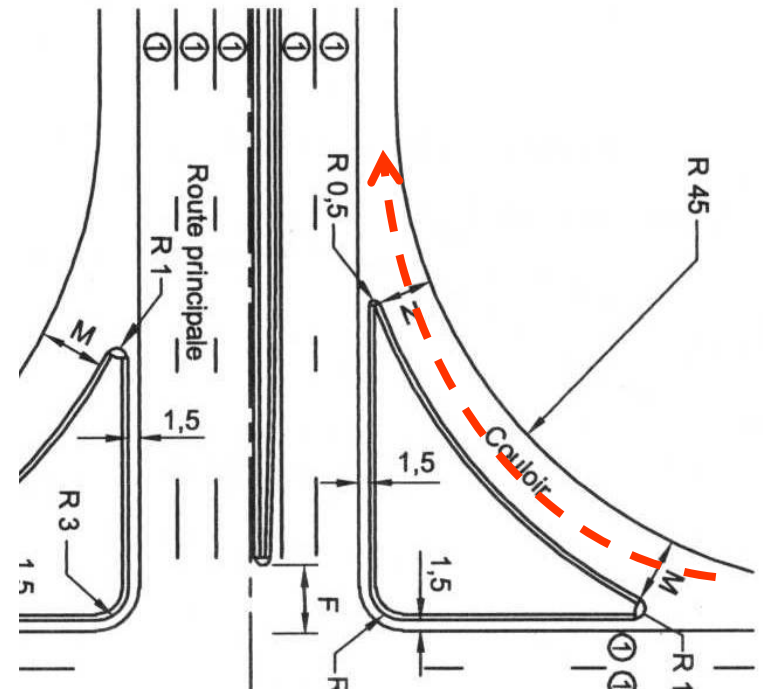
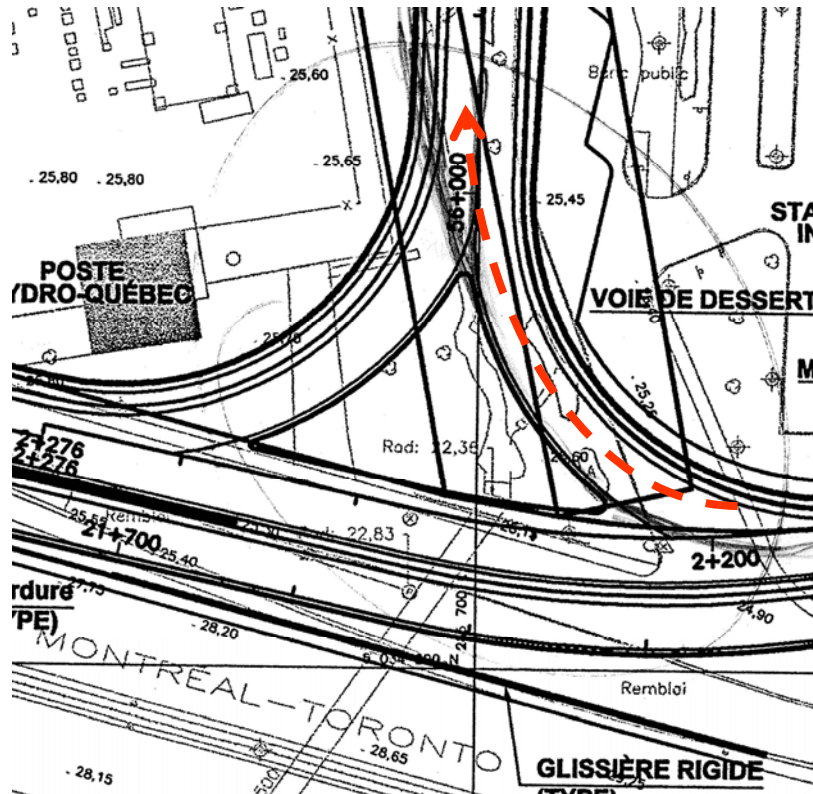
Final remarks

- Safety Audit is a low cost, high benefit process that assists in producing safer new roads
- Concern has been expressed about the legal implications of Safety Audit, but this should not preclude its development
- The development of procedures, training of auditors, and compliance with procedures should ensure safety benefits and minimise the risk of litigation

Audit at design stage



Audit at design stage



Island design

Audit at Post-opening stage



Audit at Post-opening stage

Bus stop



Shopping Centre



**Thank you
for your attention!**