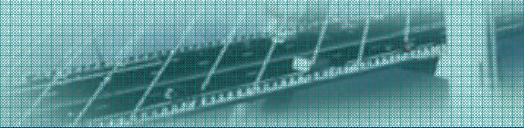




WORLD ROAD ASSOCIATION
ASSOCIATION MONDIALE DE LA ROUTE



PIARC Road Safety Audit Guidelines

ROAD SAFETY SEMINAR

PIARC/AGEPAR/GRSP

Lome, Togo

October 2006

Lise Fournier, Canada-Québec

Contents

- PIARC 3.1 Outputs
- What is Road Safety Audit?
- Safety Audit Process
- Costs and benefits of Safety Audit
- International development of Safety Audit
- Methodology for developing Safety Audit
- Examples of safety issues



PIARC TC 3.1 Outputs

- PIARC Technical Committee 3.1 on Road Safety has focused on Road Safety Audit (RSA)
- RSA Guidelines will be 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 eg ped crossings
- Carried out at formal design and post-construction stages
- Requires independent staff with experience of road safety engineering to undertake Safety Audit

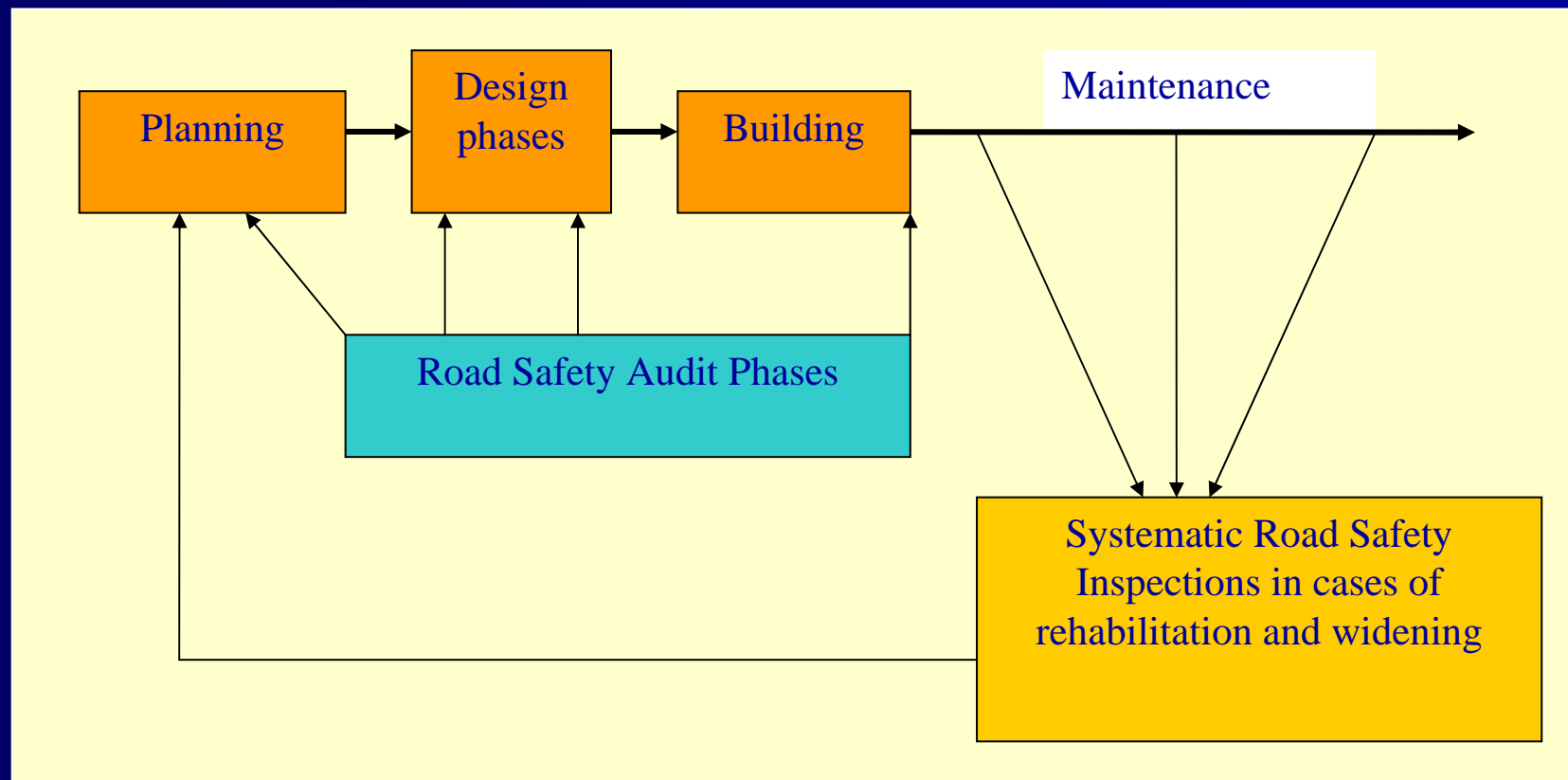


What is Road Safety Audit?

- 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



Road Saety Audit Phases



Safety Audit Process

- Ordering

Ordering the audit



Selecting the team



Providing background
information to the Audit
team leader



Commencement meeting



Safety Audit Process

- **Completion**

Completion meeting



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



Follow up



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



Costs and benefits of Safety Audit

- 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
- 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
- TMS found accidents predicted in audits did occur if scheme left untreated



Checklists

- To ensure that safety aspects have not been overlooked during the procedure
- To identify issues and problems that can arise at the relevant stage
- Different checklists for different stages
- Questions regarding the safety of all users



International development of Safety Audit

- UK Standards: 1991, *(updated 1994, 2003)*
- New Zealand: 1993
- Australia: 1994
- Denmark: 1997
- Ireland: 2000 *(updated 2001, 2003)*
- PIARC June 2005 survey – 21 highway authorities from around the world, 16 carrying out Safety Audit



PIARC survey of active 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



PIARC survey of active Safety Audit

- 75% carry out audit at least one design stage, 56% at post-opening
- 75% undertake night time audits
- 63% audit teams selected by roads administration
- 56% audit teams from private sector
- 44% audit teams from public sector



PIARC survey of active Safety Audit

- 56% audit teams require a qualification
- 81% clients require a formal report
- 38% require a formal response to audit
- 50% undertake some evaluation of benefits of process
- 38% where liability issues are not formally addressed



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
 - Consult on draft procedure at national and local level
 - Adopt procedure within national design standards



Methodology for developing safety audit

- Determine training needs and design appropriate training courses
- Seminars to start process to raise awareness, and to launch procedures
- Ongoing training programme for national and local staff
- Install an independent RSA Centre



Final remarks

- PIARC survey demonstrates desire for Safety Audit to be developed in Africa
- Concern has been expressed about the legal implications of Safety Audit, but this should not preclude its development

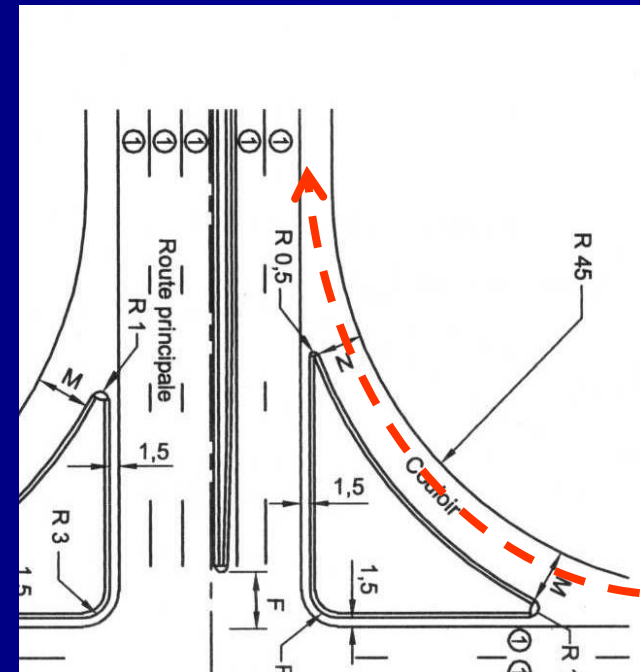
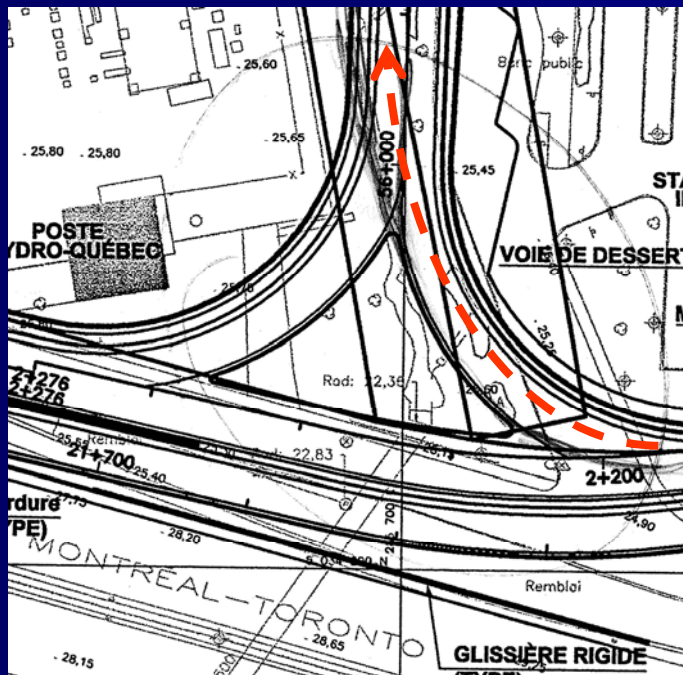


Final remarks

- 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



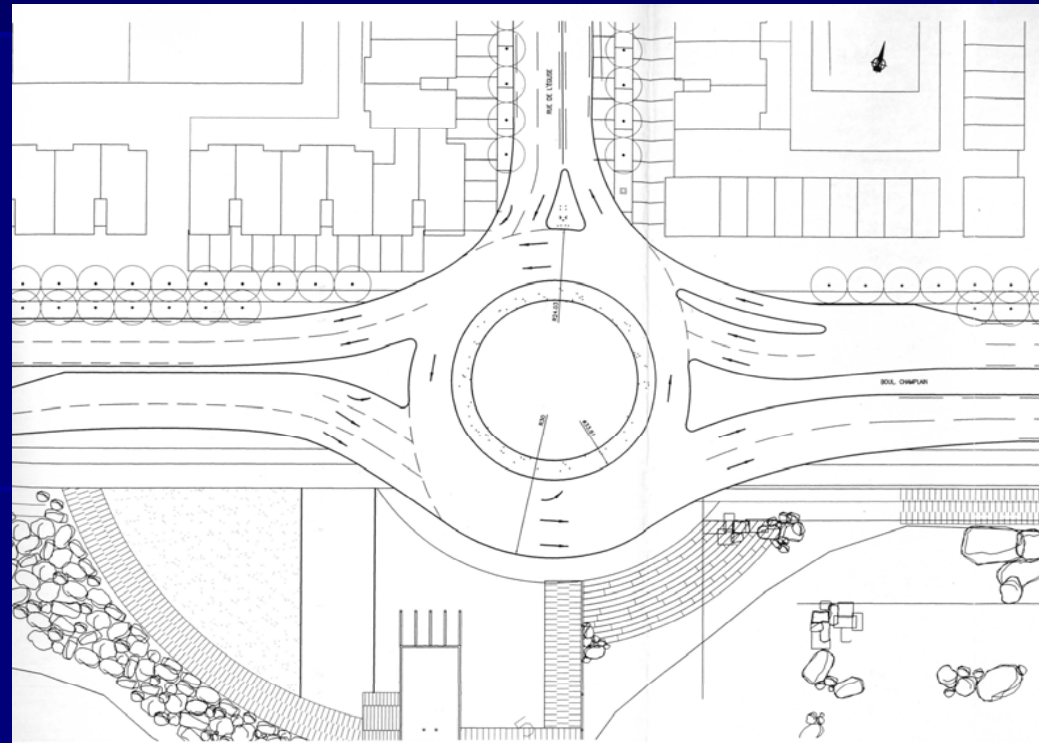
Island design



PIARC/AGEPAR/GRSP
Road safety seminar in Lome, 11-13 October 2006

Audit at design stage

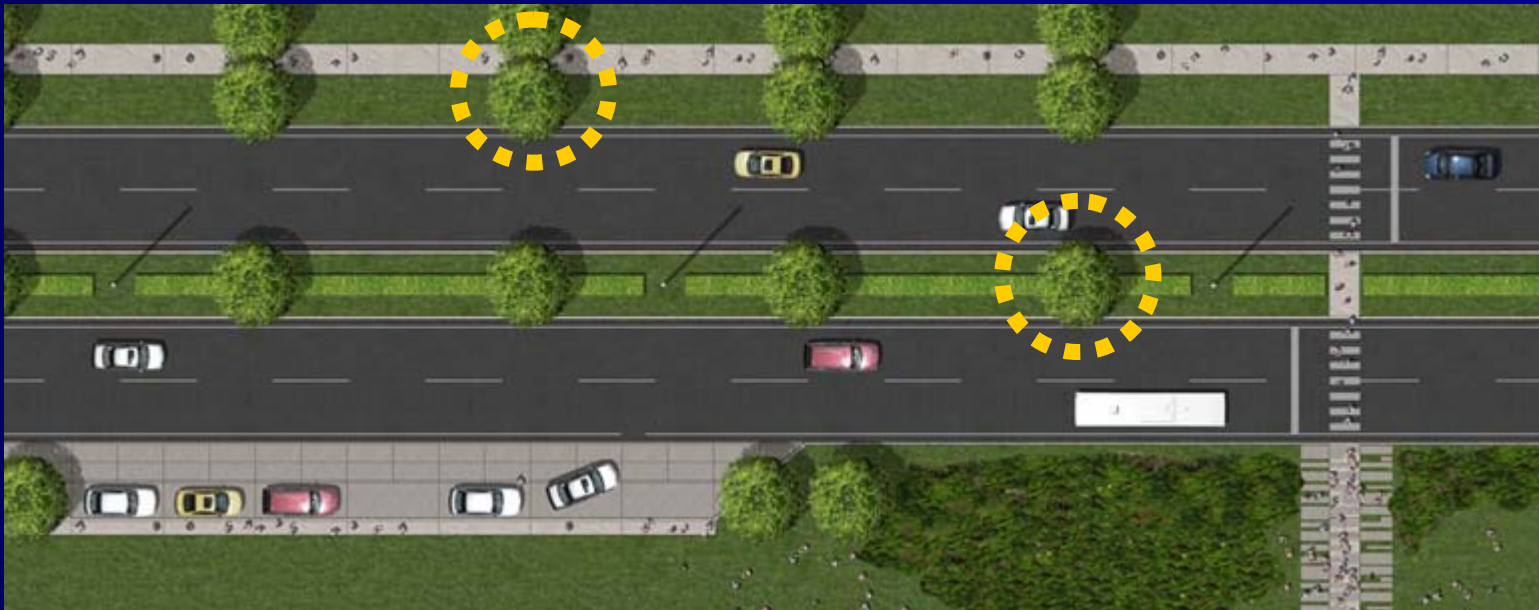
- Large diameter (60m)
- Multiple lane in the circular road
- Left turning lane
- Right turning lane



Pedestrian crossing is very difficult
Roundabout fonctionnality is reduce for all users



Audit at design stage



Obstacles located within the clear-zone distance must be removed, relocated, redesigned or shielded by traffic barriers



Audit at Post-opening stage

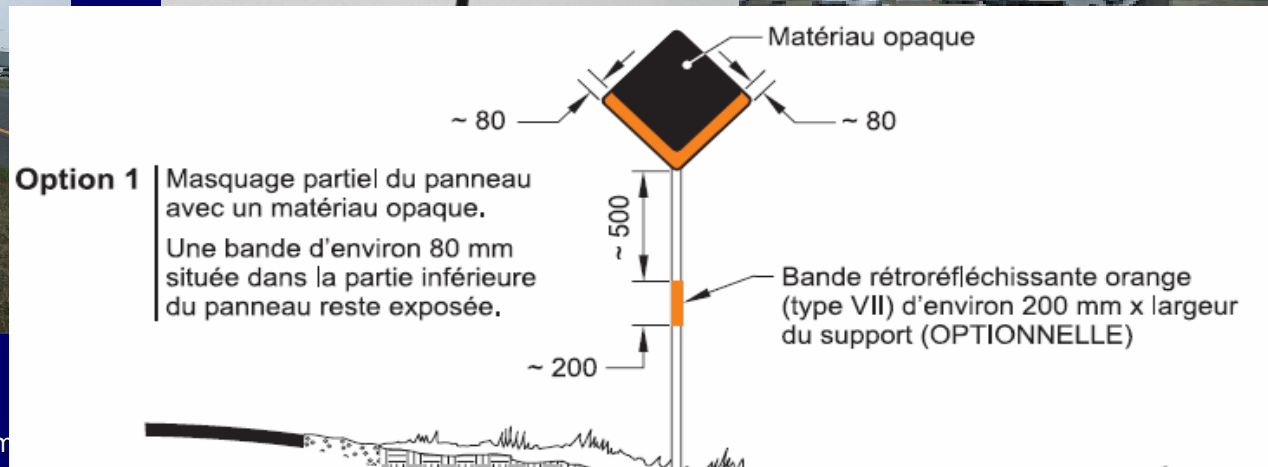






Bus stop

Shopping Centre



Thank you
for your attention!