Point8
traffic engineering and transport planning

Pedestrian Risk Management during Urban Construction Projects

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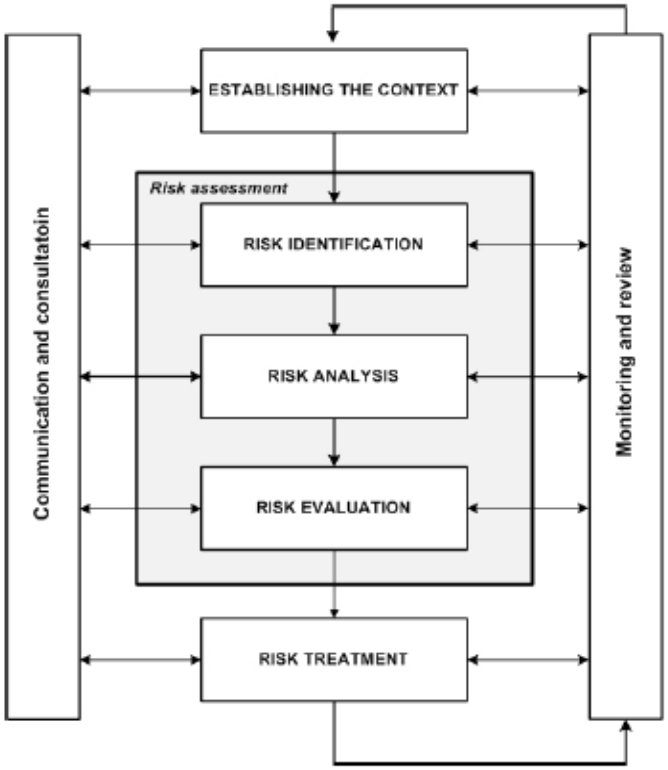
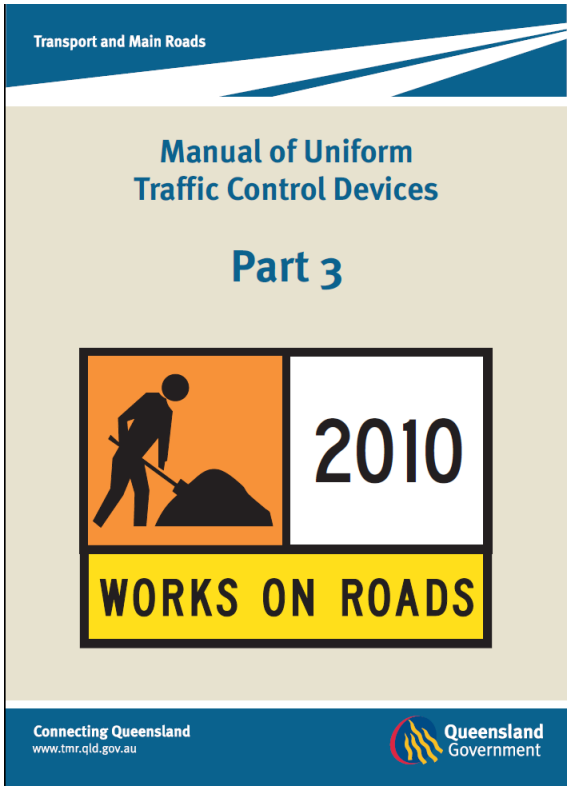
CONTENT

- RISK ASSESSMENT
- STANDARDS
- GCRT EARLY WORKS
- CONSIDERATIONS
- FURTHER RESEARCH

Workplace Health and Safety

1. *Risk Management Process*
2. *In Accordance with the MUTCD*





RISK ASSESSMENT

		Likelihood			
		Very likely	Likely	Unlikely	Very unlikely
Consequence	Fatal	Very high	Very high	Very high	High
	Serious injury	Very high	Very high	High	Medium
	Minor injury	Very high	High	Medium	Low
	PDO/first aid only	High	Medium	Low	Low

Risk	Suggested treatment approach
Very high	Must be corrected.
High	Should be corrected or the risk significantly reduced, even if the treatment costs are high.
Medium	Should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high.
Low	Should be corrected or the risk reduced, if the treatment cost is low.

RISK ASSESSMENT BY STATISTICS?

- Pedestrians most at fault 82% of the time in pedestrian crashes
  - (QDTMR 2009)
- No pedestrian risk exposure models widely available to traffic control practitioners
- No statistics on correlation between verge width, traffic speeds, traffic volumes

RISK ASSESSMENT BY COMPLIANCE WITH STANDARDS

"Where there is a demand for use of the detour by pedestrians, cyclists or wheelchairs, facilities such as footpaths, cycle tracks and sealed shoulders as appropriate to the demand and the safety requirements should be provided."

AS1742.3

QUEENSLAND MUTCD

- Where pedestrian traffic has been diverted onto an existing roadway … a mesh fence may be used provided that:
  - the clearance is at least 1.2 m if 60 km/h or less; or
  - the clearance is less than 1.2 m if limit is 40 km/h or less.

COMPLIANCE

Complies with MUTCD, But is it Safe?

Final Alignment. Is it Safe?

LOCATION

GOLD COAST LIGHT RAIL EARLYWORKS

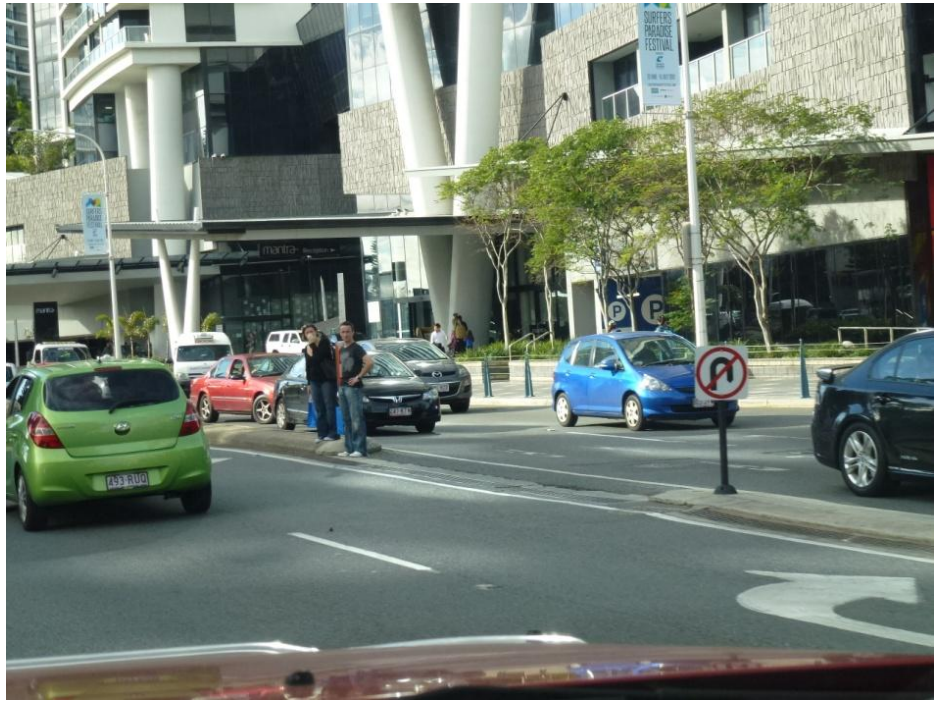
- 2km of Roadworks and Service Relocations
- Construction Space Constrained
- Traffic Volumes High
- Pedestrian Volumes High
- Properties and Driveways throughout
- 6 Pedestrian Signal Crossings
- Holiday and Entertainment Area
- Public Transport Route

BARRIERS


SILVERTON
REGENT

BALANCING RISKS

PEDESTRIAN BEHAVIOUR RISKS


SURFERS
PARADISE
FESTIVAL

OBSERVED BEHAVIOURS

- higher levels of jaywalking
- barrier lines as refuge / median
- climbing over barriers
- walking on the traffic side of the barrier
- walking on top of barriers

CONSIDER

- lowering existing speed limits
- install barriers, but consider desire lines and deflection issues
- pre-construction illegal pedestrian movements
- identify risks associated with demographics / land uses
- discourage pedestrian behaviour through pavement markings, signage
- temporary structures where detour is excessive
- risk assessment of introduced risks & pedestrian behaviour risks.

SUMMARY

- No quantitative risk evaluation methods
- Data on relationship between pedestrian crashes and roadside environment not widely available
- Risk assessment is subjective or compliance based
- Standards don’t cover different locations, pedestrian volumes, or detour guidelines
- Focus on risk of errant vehicles
- Are pedestrians themselves the biggest risk?
- Barriers should be used but other risks assessed

FURTHER RESEARCH

- Pedestrian crashes at worksites
- Risks and Benefits of (short) Barrier segments
- What speed minimizes the risk of errant vehicle pedestrian crashes?
- Does barrier kerb protect pedestrians?
- Managing Pedestrian Behaviour through devices and linemarking.

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