

RISSB product for prioritisation

Primary information	
Type of product being suggested:	Guideline
Title of product being suggested:	Light Rail Urban Design Safety Guideline
Date of suggestion:	21 February 2018
Reason for suggestion:	<p>Observed deficiency/opportunity in the industry and following a UK RAIB investigation into the 2016 Croydon Tram incident that killed seven people, being for:</p> <p>“Operators, owners and infrastructure managers should jointly conduct a systematic review of operational risks and control measures associated with design, maintenance, and operation of tramways. Then using the output of this review, in consultation with ORR, publish updated guidance on ways of mitigation the risks associated with design, operations and maintenance of UK tramways”.</p>
Railway discipline area:	Light rail infrastructure
Scope:	
<p>There is a resurgence of light rail in Australia with operation, construction and extension of light rail systems occurring throughout major cities in Australia. The integration of light rail systems in urban environments an bring challenges in delivering a safe system, so far as is reasonably practicable while maintaining the principles of a light rail line of sight system.</p> <p>Like the UK Guidance on Tramways the scope of the document would be intended to give advice. Design principles, and not set an absolute standard, setting examples of established good practice to provide an acceptable level of safety.</p> <p>The design principles in particular would be focused on ways of managing key light rail safety risks, through the urban and infrastructure design, which would support so far as is reasonably practical safety arguments and assist in delivery of safe light rail systems throughout Australia. It would also assist in differentiating between the design principles between light and heavy rail, and draw upon the interface requirements of light rail operating as part of a roadway and integration with the urban environment.</p>	
Objective:	
<p>The objective of the document would be to increase the consistency in urban and infrastructure design principles in the forms of a guideline for new light rail systems and extensions or upgrades of existing light rail systems in Australia. It is proposed that the guideline would be referred to by designers, constructors and light rail operators. It would also be referred to in discussions with key stakeholders such as interfacing councils, who may not be experienced in the rail safety risks associated.</p>	

Hazard identification:	
1	Light rail interface with roads and the potential consequences of: <ul style="list-style-type: none"> • Collisions with motor vehicles. • Trespass with motor vehicles accessing segregated light rail corridors.
2	Light rail interface with pedestrian movements and the potential consequences of: <ul style="list-style-type: none"> • A collision with pedestrian. • Pedestrian slip trip fall.
3	Light rail operating risks and potential consequences of poor design of: <ul style="list-style-type: none"> • Signals. • Overlaps. • Points and crossovers. • Sign considerations. • Rail alignment.
4	Operator human factor risks and relevant engineering controls for: <ul style="list-style-type: none"> • Excessive speed. • Missed signals.
Benefits:	
<u>Safety</u>	
<p>The guidance document would enable consideration of learnings and best practice options to manage light rail safety risk from established light rail operations in Australia, as well as applicable guidance from overseas to be accessible for key stakeholders for systems being designed, commissioned and operated.</p> <p>As stated above the design principles would be focused on ways of managing key light rail safety risks, through the urban and infrastructure design, which would support so far as is reasonably practical safety arguments and assist in delivery of safe light rail systems throughout Australia.</p>	
<u>Interoperabilityⁱ / harmonisationⁱⁱ</u>	
<p>Applicable to all light rail operators, designers and other key stakeholders such as road managers, who could use the guidance document in considering how they manage light rail safety risks and enable or encourage increased consistency in the level of safety. This would provide a baseline for demonstration of so far as is reasonably practicable.</p>	
<u>Financial</u>	
<p>The guidance document would increase efficiency by:</p> <ul style="list-style-type: none"> • Being a reference in design • Reduce the need for installation of additional controls upon commencing operations • Reducing need for modifications. 	
<u>Environmental</u>	
N/A	
Impacts:	
<p>There may be limited availability in light rail design specialists in Australia. Many new Systems in Australia are already under construction and some designers could object to a document that could challenges their existing safety arguments.</p>	

ⁱ Interoperability - the ability of a process, system or a product to work with other process, systems or products (aka compatible systems through managed interfaces).

ⁱⁱ Harmonisation - the act of bringing into agreement so as to work effectively together (aka uniformity of systems).