TMH24 - A ROAD ASSET MANAGEMENT SYSTEM (RAMS) PERSPECTIVE ON PBRRS

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ABSTRACT

Pavements and bridges account for a large part of the road asset value and have been the main focus of road asset management. However, the road system includes a variety of non-pavement, road-related assets, each of which plays an important role in delivering the overall function of the road. Road restraint systems (RRS) are important road-related assets and represent a significant investment in road safety infrastructure. Asset management of these systems, such as guardrails, barriers, transitions to bridge parapets and crash cushions, is a critical component of road safety and infrastructure management.

Historically, road restraint systems have been managed as part of maintenance management systems, which have a reactive maintenance focus. In recent years the value, operational costs and significance of RRS have been recognised, along with the need to provide more guidance for the management of these assets. Effective management ensures these systems perform optimally throughout their lifecycle, reducing risks and enhancing road user safety.

Components of RRS Asset Management include Inventory, condition assessment, performance monitoring, risk-based specification and prioritisation, lifecycle planning and cost optimisation.

Maintaining an up-to-date inventory of all RRS assets, including their locations and specifications, is essential. Regular condition assessments help identify wear, damage, or obsolescence, guiding timely maintenance or replacement actions.

Continuous monitoring of RRS performance, including their effectiveness in crash scenarios, is vital. Implementing risk management strategies helps prioritize interventions based on factors like traffic volume, accident history, and environmental conditions.

Adopting a whole-of-life cost approach ensures that decisions regarding installation, maintenance, and replacement are economically viable and sustainable. This involves planning for future needs and budgeting accordingly.

Existing RRS must be evaluated in terms of their containment performance requirements, accompanied by a review of relevant standards and guidelines where necessary. The recently published TMH 24 South African Road Restraint Systems Manual, and its finalisation as a practical reference for assessing RRS compliance and performance within a performance-based and risk-informed asset management framework, must be supported towards its acceptance as a COTO Draft Standard.