



**Design.  
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IPENZ Transportation Group  
Conference 2016  
Auckland 7-9 March

Pullman Hotel, Auckland



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Key Author for Correspondence:			
First name	Shane	Surname	Turner
Organisation	MWH Global		
Postal address	PO Box 13249, Christchurch 8141		
E-mail Address	shane.a.turner@mwhglobal.com		
Phone number	03 345 6669	Cell Number	0274 955 048
2nd Co-Author:			
First name	Keith	Surname	Weale
Organisation	MWH Global		
3rd Co-Author:			
First name	Rachel	Surname	Blewden
Organisation	MWH Global		
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### **Overview of Presentation** (200 word maximum)

*Include details of topic scope, key findings, and any issues for discussion or further investigation*

Road design guidelines in New Zealand (and Australia) originate from empiric data and practical experience that often pre-date the development of models and factors that relate crashes to design elements. The design guidelines do include margins of safety, but the actual margins and the safety compromises of not meeting the guideline values are not known, nor are they quantified. So, where can design requirements be relaxed, and by how much, without having a major impact on road safety? With the emergence of better crash prediction models and crash modifying factors, and associated crash prediction tools, it is now possible to challenge many design requirements. This paper will discuss a number of overseas case studies where design requirements have been challenged using crash models and factors. It will discuss recent and current research that has established, or is trying to establish, the relationship between crashes and different design elements, for example left-turn slip lanes. It will also discuss the most important areas where design guidelines could be challenged; that is, where the design requirements appear to be excessive and where large reductions in construction costs might be saved, without a major impact on road safety, for example crest vertical curvature.

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