**Transport as a System: applying Systems Engineering to transportation projects**

It’s common to refer to certain aspects of transport as ‘systems’, or to think of the whole transport network as a ‘system’, but what do we really mean by this? Systems Engineering emerged as a discipline in the 1950’s, originally driven by the Aerospace and Defence sectors, however it has seen increasing application in the transport domain in the last two decades. It gives a formal definition to what constitutes a ‘system’ and proposes a set of methodologies and tools for managing the development, delivery and operation of systems throughout their lifecycle.

This presentation will look at the application of Systems Engineering practices to transport projects in New Zealand, including how they have been applied on some of Aotearoa’s largest and most complex projects such as City Rail Link and the InterIslander Resilient Connection (iReX), along with how they can provide value to smaller and more straightforward project deliveries. It will define the overall transport network as a ‘system of systems’ and consider how these separate systems can be integrated to provide people-focussed outcomes.

We will show how approaching the transport network as a system, by applying formal Systems Engineering techniques, can help to mitigate the risks of project overrun, budget blowout, and benefit under-delivery that often accompany large and complex transport projects.