SBEnrc Project 1.35

Transport Network Resilience: Disaster Logistics and Infrastructure Vulnerability

Achievements to Date – November 2014

Overview

The project kick-off meeting was held at the Queensland Department of Transport and Main Roads (QTMR) Offices in Brisbane on 12th August 2014. Since then, progress on the three core phases is indicated in the sections below.

Phase 1

The key development in relation to Phase 1 (Identifying the core challenges in the management of the transport network prior to, and in the aftermath of, a disaster) has been a major half-day, externally facilitated, workshop that was held on Tuesday 4th November in Townsville. This was opened by the Mayor of Townsville (Councillor Jenny Hill), and attended by just over 30 members of, and/or advisors to, the Townsville Local Area Disaster Management Group, together with invitees from the primary industry sectors (mining and agriculture), logistics organisations, and the retail sector.

The workshop attendees were invited to explore ways in which the resilience of the logistics networks, prior, during and after the advent of a disaster in the region might be improved. To achieve this goal, four core questions were discussed:

1. What should be – development of an unbridled vision of the future.
2. What is – enablers and disablers to that vision.
3. What could be – ways in which the enablers can be promoted and the disablers mitigated.
4. What can be – a personal commitment to take forward one or more outcomes from the workshop.

The output from this workshop is of the order of 10 sheets of 'butchers' paper' which is currently being processed. However it is relevant to note that almost all of the attendees stayed throughout the workshop and this is, in itself, testament to the level of interest and engagement that the whole issue is generating.

The workshop was also linked to 'Cyclone Sunday' which is a Townsville community event aimed at support preparations for the wet season, and the lead for Phase 1 of the project attended this in support of our hosts from the Department of Integrated Sustainability.

Following on from the success of the workshop a 2nd workshop is now scheduled for 18th February 2015 in Broome which will be hosted by the Shire's Local Emergency Management Advisory Committee (LEMAC) and supported by the Western Australia State Emergency Committee.

Project Partners:

SBEnrc Project 1.35

Transport Network Resilience: Disaster Logistics and Infrastructure Vulnerability

Achievements to Date – November 2014

Phase 2a

In parallel, the work in respect of Phase 2a (Modelling the existing transport networks) has commenced, and the key aspect to report is that we have been successful in winning a prestigious Australian Government Endeavour Fellowship for Dr Wisinee Wisetjindawat of the Nagoya Institute of Technology in Japan. Dr Wisentjindawat's involvement is key to Phase 2a as she will be able to employ a proven methodology that supports the Japanese governments disaster and resilience planning in an Australian context. To this end, the capture of the underpinning data is already underway with a particular focus on a number of key commodities that are broadly representative of the generic traffic flows in the region. These are:

a. Groceries (including perishable goods; baby formula and nappies; etc.) the major retailers' logistic hubs in Victoria north to NQ/FNQ.
b. Petroleum fuel products (incl. diesel) from into NQ/FNQ.
c. Perishable agricultural produce (such as bananas or mangoes) that are being exported from the NQ/FNQ region.

Phase 2b

Work on Phase 2b (Developing an improved methodology for the identification of transport and infrastructure vulnerabilities) is also progressing solidly with the following activities currently in hand:

a. Identification of the various functions/activities of different parties identified within the Townsville Local Disaster Management Plan (LDMP).
b. Establishing the links between these functions/activities based on the LDMP and the transport sub-plan in order to understand how one function/activity will affect others.
c. Quantification of the associated factors of all functions/activities.
d. Evaluation of the resultant network vulnerability.

The overall results of this initial analysis will be used to populate a Functional Resonance Analysis Method (FRAM) model, the very first stage of which is attached.

Professor Peter Tatham
Chief Investigator
8 December 2014

Project Partners:

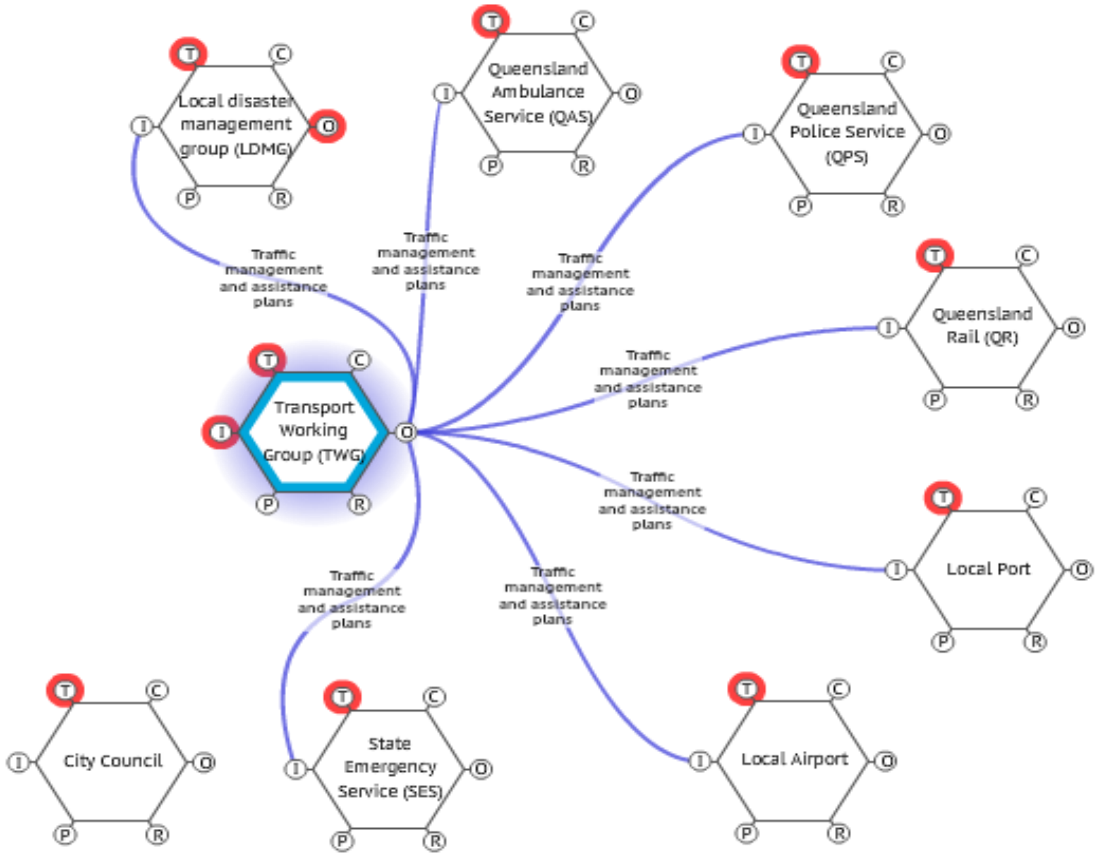
SBEnrc Project 1.35

Transport Network Resilience: Disaster Logistics and Infrastructure Vulnerability

Achievements to Date – November 2014

A preliminary FRAM model

- I = Input
- O = Output
- R = Resources
- T = Time
- P = Pre-conditions
- C= Controls or Constraints



Project Partners: