

SBEnc Project 1.35

Transport Network Resilience: Disaster Logistics and Infrastructure Vulnerability

Project Progress Report – February 2015

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 second major half-day, externally facilitated, workshop that was held on Wednesday 18th February in Broome. This was opened by Mr Chris Mitchell (who represented the President of the Shire of Broome), and was attended by just over 30 individuals who were members of, and/or advisors to, the Local Area Disaster Management Group, together with invitees from the primary industry sectors, the voluntary sector and local businesses.

Using the same methodology as had been adopted in the Townville workshop that took place in November 2014, 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:

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

The output from this workshop is in the form of 24 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.

In parallel, the initial analysis of the input from the participants in the Townville workshop has now been completed. Once the analysis of the Broome event has also been completed, the emerging themes from the two workshops will then be compared and contrasted leading to a summative report of the key issues. This will then be fed back to the workshop participants in order both to confirm the accuracy of the analysis and also to understand the relative importance attached to the core themes in order that they can further inform the work of Phases 2a and 2b, and also be developed into proposals for focused interventions as part of the next round of SBEnc projects.

Phase 2a

The work in respect of Phase 2a (Modelling the existing transport networks) is now advancing in line with the approach and method outlined in the Project Schedule. Initially the research for this phase started preparing analysis of grocery goods logistic chains in NQ and FNQ. However, the findings of Phase 1 suggest a much more important issue for these communities is the movement of petroleum fuels into the region following a disaster, and the movement of agricultural produce out.

The modelling on petroleum fuels is the most advanced and through the use spatial datasets on motor vehicle registrations in QLD, petrol station locations, road and rail networks, measures of demand for transport fuels (excluding mining and agriculture) are being developed. This base layer will be shortly married with data on supply depots and flooding risks, and then ground-truthed with industry to create an analysis that helps identify and visualise vulnerability under specific scenarios (i.e. 3, 7 or 10 day road/rail closures). Key inputs and industry partner directions for this modelling will be sought at the project meeting on 12th March when Dr Wisetjindawat will again be joining us in person from Nagoya to help present this work.

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Phase 2b

Publicly-available technical reports such as "Townsville local disaster management plan" and "Townsville transportation sub plan" have been examined to identify stakeholders, their key functions and responsibilities. The identified functions have been mapped using the Functional Resonance Analysis Method (FRAM) which is an ideal approach for modelling complex socio-technical systems. Validating and fine-tuning the model will be undertaken using the outcome of the workshops held in Townsville and Broome.

Summary

It is believed that the project is progressing satisfactorily and in line with the planned timeline and that no major insuperable challenges have yet been identified. The next major milestone is the Project Steering Group meeting which will take place on Thursday 12th March. It is also planned that this will be preceded by a meeting with QLD DTMR staff in which the issues emerging from the Townsville workshop will be reviewed and discussed.

Professor Peter Tatham
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Project Partners: