Our Transportation System is in Crisis – 137

I had planned to close the discussion of my last two articles with an example of how contracting for maxi-taxis and taxis could be integrated with PTSC for the provision of a well-organised national transit system. The recent flooding disaster has persuaded me to revisit evacuation transportation planning and traffic management.

I created the following scenario in November 2006, exactly two years ago, almost to the day of the recent flooding: "Let us imagine that it is a weekday afternoon at 3:00pm and there is heavy rainfall, and a newsflash just advised that one of these culverts has collapsed completely across both carriageways of the Beetham Highway. As a result there is major flooding on both the Eastern Main Road and the Priority Bus Route, and several areas of Beetham / Laventille. And concurrently, there is a major landslip across the Lady Young Road near the Lookout. In other words, the entire eastern side of POS is cut off from traffic accessibility. Is this scenario so far-fetched?"

Isn't this amazing? The only exception is that the collapsed water course was further east at Macoya. In my very next article concerning that scenario, I wrote "More than 200,000 persons are likely to have been trapped, and require assistance to exit the city. There will be a mad rush to use Saddle Road in Maraval as a bypass to San Juan, and so there will be tremendous congestion in the city, especially around the Queen's Park Savannah. There will also be need for policing traffic on the flooded EMR and PBR. But a critical examination should be made of using the inter-island ferry to shuttle persons and/or vehicles to Point Lisas, as well as supporting security and storage of vehicles at the parking garages and other places in POS."

There are two types of evacuation: one that occurs prior to a forecast catastrophic event, or pre-event evacuation; and, one that occurs following an unplanned catastrophic event, or post-event evacuation. Pre-event evacuation can be simple to perform—if the event can be predicted sufficiently in advance and with reasonable certainty.

A post-event evacuation differs from pre-event evacuation for several reasons, including: Unpredictability of the time available for the population to seek refuge; Increased complexity of traffic demand scenarios to be analysed; Possible reduction in road availability as certain elements of the road system may be rendered inoperative; Necessity to guarantee the simultaneous movements of both operative and rescue vehicles; increased difficulties in coordinating and directing the evacuation; Changes in ordinary behaviour due to panic; and, Increased probability of road accidents or unforeseen circumstances.

The 4:00pm news on a particular radio station on Tuesday November 18, 2008 gave a Police Bulletin stating that (1) if you were in your office, you should remain there, and (2) if you were attempting to visit POS, you cancel your trip. In fact, all the radio stations were broadcasting varied information on the disaster. Some people said that although they were listening to the radio in their vehicle, it was only when they reached the landslide that they realised that the Lady Young Road was closed. I have several concerns with the above, including (a) Did the authorities advise the NIPDEC-controlled parking garages (e.g. the Parkade) to remain open past 6:00pm, so that those who had to remain in their offices could be comfortable that their vehicle would be safe, and that they would not have to remove it to park in flood waters; (b) There are people who live east and west of POS and must pass through POS to get to their destination, and provision must be made to either get them through, or to accommodate them elsewhere; and, (c) There should have been helicopter monitoring of the overall situation and advising a single entity on conditions and directives, and that single entity should have exclusively been permitted to broadcast information in the media. I am also surprised that more than two years since the announcement of the preparation of a disaster evacuation plan there is still none in place.

The way forward is a balanced approach to evacuation planning. In preparing this approach, the following should be considered: how much time is needed for the entire population to reach a safe place; how many people are at risk as a result of the estimated evacuation time; what routes must be used by public vehicles employed in the evacuation; what types and volumes of commercial vehicles are likely to be involved in the analysis; what are the bottlenecks on the network when exposed to the traffic demand produced by an evacuation; and, what traffic control measures can be implemented to improve the efficiency of the network? The analysis should also include the generalized hypothesis that the rationality of the evacuating user fails: the user acts without information on the transportation network's state of congestion and, due to panic, is unable to evaluate lucidly any information received in real time.

A multimodal strategy may be inevitable, particularly in the case of a post-event evacuation. Not only shuttle bus, maxi, etc., but also water options such as ferry shuttle,

etc. Depending on the circumstances, there may be a need to prevent private vehicle travel.

The evacuation strategy must consider and allow for the circulation needs of the city residents, and the security needs of the city businesses and residents.

There must be coordination in decisions relating to management and operation of the transportation network, and between the public and emergency officials. There must be frequent updates to broadcast media for use on radio / TV. There must be increased communications capacity to support peak demand for providing information to the public and support a redundant and robust communication system that is tolerant to equipment failure. Two-way radios would help field personnel communicate during the evacuation; and Internet email would help agencies communicate decision with their staff.

Employment of Intelligent Transport Systems (ITS) is mandatory for monitoring traffic incidents on the routes, including: a Traffic Management Centre and CCTV. Each of the cameras along routes should be equipped with pan, tilt and zoom capabilities, which will be controlled remotely by the system operator. Information will be conveyed to the motorists using Variable Message Signs (VMS).

Tow-trucks would be used to ensure that disabled and abandoned vehicles could be removed. The strategy would identify the number of tow trucks to be used and the time periods they are to be available, the stationing and staging of tow-trucks in the transportation system, storage of towed vehicles, and tow truck coordination and communication with the command centre.

The strategy should be flexible and adaptable to contingencies. Helicopters may be preferred to continuously monitor traffic conditions, particularly in the short term, when the advanced traffic control systems have not been installed.

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