

Switching routes to prevent excessive traffic

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Abstract

This study is concerned with motorists' behaviour when an element of the road network is reduced in capacity.

A knowledge of motorists' responses is important in light of the increasing incidence of reductions in road capacity, due to road space being reallocated to other modes: pedestrianization, cycle lanes, bus lanes and street running light rail. Capacity is also reduced when infrastructure is unavailable because of natural or man-made actions or lack of action. Authorities need to ensure that traffic can cope with the disruption that reducing capacity brings, whether caused intentionally or unexpectedly.

The field study for this thesis consisted of a qualitative survey of motorists who drove along Epping Road in Lane Cove, Sydney both before and after the reduction in capacity associated with the opening of the Lane Cove Tunnel in 2007.

It has been noticed that traffic reduces after an incident of reduced road capacity, but only to the extent it needs to do so. The results of the study suggest a hypothesis to explain this result. This hypothesis posits that a minority of motorists have a habit of changing routes to avoid delays. This habit, exercised after road capacity is reduced, in combination with a range of responses that have been observed to follow a reduction in road capacity, ensure that the changes that occur in traffic are no more than necessary to maintain traffic at a level that is acceptable to the motorists who make up that traffic.