

ADDENDUM TO	ROAD TRANSPORT THROUGH KAPITI TRANSPORTATION REVIEW FOR KAPITI COAST DISTRICT COUNCIL 29 SEPTEMBER 2009
DATE	2 OCTOBER 2009
SUBJECT	ROAD CAPACITY

Further to Section 2.4 of the report: "Road Transport through Kapiti Transportation review for Kapiti Coast District Council", 29 September 2009, the following provides further clarification regarding the capacity of a four-lane highway.

Assuming a four lane undivided highway, rather than an expressway, then 1,780 vph¹ (with a design speed of 80 kph) or 1,870 vph (with a design speed of 100 kph) per direction would be the theoretical maximum volume that could be accommodated and maintain a level of service² "C", although the number of intersections that connect with the highway and the subsequent effects of traffic decelerating from and accelerating into the through traffic stream will affect this theoretical volume. More importantly, any at grade intersections that directly affect the operation of the highway (eg traffic signals or roundabouts) can become the critical aspect in the assessment of capacity. These have not specifically been assessed as the number of intersections and traffic flows at each intersection will vary depending on the location and layout of intersections.

Traffic models have been developed by Opus International Consultants for NZTA. Models of Option 2 (East) indicate that between Poplar Avenue and Peka Peka Road, the state highway is expected to carry no more than some 900 vph by 2026. Opus has also indicated that future traffic growth from 2026 is expected to be 0.9% (arithmetic) per annum. Even if the growth rate was 2% per annum, theoretically, this section of highway could accommodate expected traffic growth for at least 50 years. However, critical to this assumption is that the highway and its intersections will be able to accommodate turning traffic safely and efficiently. Minimising the number of intersections will improve flow for highway traffic, but will mean that traffic loads at the remaining intersections will be higher. Further analysis, including the development, assessment and comparison of layouts for intersections (and the number of intersections) will need to be undertaken to determine if a viable solution can be provided. This analysis should also take into account other considerations, including effects on the environment and social and economic impacts.

Reference: S:\kcdcl002\A1A091002.doc - acrafer

¹ vph - vehicles per hour

² Refer Section 2.4 of the main report for definition of level of service