10. TYRONE STREET VIBRATIONS

Officer responsible	Author
City Streets Manager	Binaya Sharma, DDI 941-6341

The purpose of this report is to inform the Board about the outcome of the traffic movement measurements undertaken between 19-28 March 2003 on Tyrone Street, Factory Road and Richill Street.

BACKGROUND

The residents of Tyrone Street brought their concerns to the Special Meeting of the Shirley/Papanui Community Board on 4 Dec 2002.

Since traffic signals were installed at the State Highway 1/Main North Road/Richill Street intersection residents have reported an increase in the amount of traffic using the local road network, especially Richill Street and Tyrone Street. Their main concern was the use of this road as a through route by heavy vehicles from businesses in the area, creating vibrations and causing damage to adjacent properties. As an initial effort the Community Board decided to make the local businesses aware of these concerns. The effect of this approach is not known.

DISCUSSION

Traffic volumes, speed and vehicle classifications were measured during the survey, which was undertaken over 10 days along the roads in the following locations:

- Factory Road west of Tyrone Street
- Tyrone Street between Factory Road and Richill Street
- Richill Street west of Tyrone Street

Traffic Volume and Heavy Motor Vehicle Movements

The traffic volume count data is attached to this report.

The traffic movement result clearly shows that the percentage of heavy motor vehicles (HMV's) passing along Richill Street and Tyrone Street is in the 'normal' range expected. The use of local roads by trucks can be expected to be around 3% of the total traffic flow. However, the proportion in Factory Road is higher.

When analysed the data obtained from the traffic counts shows that Factory Road has a heavy vehicle percentage of more than 10% of the total vehicles passing through it, whereas the range is between 2.74% to 3.46% in Tyrone Street. The average daily traffic (ADT) over a period of one week in Factory Road is 786, whereas Tyrone Street and Richill Street ADT are 602 and 760 respectively. Similarly, the total volume of vehicles recorded during the 10 days survey period was 7,487 along Factory Road, 6,942 in Richill Street and 5,667 in Tyron Street.

The status of both Factory Road and Tyrone Street is the same; they are both local roads and there is, at present, no differentiation between the two for the passage of heavy motor vehicles. However, with Business zones (B4 and B5) fronting onto Factory Road, higher flows and a greater proportion of HMV's is only to be expected.

Speed

The record shows that the mean speed of vehicles passing through Tyrone Street is within the normal range. Most of the heavy vehicles are travelling within the speed limit. When comparing vehicle types and timings it is interesting to see that in most cases it was the drivers of light vehicles who exceeded the limit.

The mean speed of vehicles passing through Tyrone Street was recorded as 42.4 km/hr (combined), whereas Factory Road and Richill Street were 49.73 km/hr and 45.99 km/hr respectively. The difference between the mean and 85 percentile speed in Tyrone Street was observed to be within the acceptable limit of 10 km/hr.

It has been observed that there are only a limited number of businesses using Tyrone Street. During the course of preparing this report an inspection of these streets was made to record their present condition. Interestingly, at about 1.45 pm on 6 May a logging truck with trailer was observed coming out of Factory Road turning left into Tyrone Street then along Richill Street before turning right (north) into Main North Road. The speed of this truck was approximately 40 km/hr.

Vibration

The reconstruction of Tyrone Street with new pavement and new kerb and channels has been completed. Loose chips coming out of the road surface are now minimal. This new pavement will have certainly limited the amount of vibration that was being created by trucks prior to the reconstruction of the roadway.

In February 1996 Jonathan Chambers & Bryan Pidwerbesky from the Department of Civil Engineering, University of Canterbury did a research project for the Christchurch City Council to investigate traffic induced vibration in houses adjacent to Opawa Road, Bexley Road and Innes Road. The research highlighted the vibration as the function of the road surface, the speed of HMV's and the ground conditions.

The results of this research and results of similar studies carried out in the past provided no compelling evidence that traffic induced vibration directly cause structural damage to homes. Generally, faults in surveyed buildings are not considered to be a result of vibration caused by passing traffic but due to other site factors such as ground conditions.

CONCLUSION

It would be untimely to ban heavy motor vehicles along Tyrone Street and Richill Street or to introduce traffic calming measures, as there is not a disproportionate number of these vehicles using these roads. The recorded mean speeds at the present time are also within the normal speed range for a local road.

Staff Recommendations:

1. That the petition submitters be thanked for their presentation and be informed of the report's findings.

2. That no action be taken at this time to ban heavy motor vehicles from using Tyrone Street.

3. That traffic in Richill Street be monitored over the next 12 months.

Chairperson's Recommendation: That the staff recommendations be adopted.