

## 9. EMPIRE ROAD OFF RAMP/MAIN NORTH ROAD INTERSECTION

**Officer responsible**  
Transport and City Streets Manager

**Author**  
Lorraine Wilmshurst, Project Manager, DDI 941-8667

### PURPOSE OF REPORT

1. The purpose of this report is to seek the Council's approval for Transit NZ to install traffic signals at the Empire Road Off Ramp/Main North Road intersection (refer attached).

### SUMMARY

2. The Empire Road Off Ramp/Main North Road intersection is a safety improvement project initiated by Transit NZ. The intersection is a crash blackspot and also suffers from significant congestion in the morning rush hour. It is a Transit New Zealand project and the Christchurch City Council is involved as Main North Road is a Council road.

3. The objectives of the project are:

- Reduce the crash rate at the intersection
- Decrease the excessive delays for off ramp traffic, especially in the morning peak
- Increase the off ramp capacity.

The delays on the off ramp during the morning peak are very long and sometimes extending back on to the motorway.

4. The existing priority intersection does not provide safe access into the area from the off ramp. With further development likely into the land Zoned B6 on the east and west, Council officers asked Transit to investigate the possibility of including access to this adjacent underdeveloped land as part of the project. The options investigated considered both the inclusion and exclusion of land access on the east (undeveloped side)

5. Options investigated:

(a) Roundabout

A multi-laned roundabout with four approaches gave access to the land to the east of the Main North Road. However the design for this multi-laned roundabout was not able to be accommodated with the existing Council road corridor and motorway land. It would have required the purchase of land on the eastern side.

The other concern raised was that the only northern access for cyclist into the city is via the Main North Road and a multi-laned roundabout provide a poor level of service for cyclists.

(b) Four (4) leg traffic signals

This option could be constructed within the road corridor, provided access to the land to the east of Main North Road and create a far safer level of service for cyclists.

This option required the Council to provide capital funding for the fourth leg of the intersection which would be added in the future when the B6 zoned land was developed. The design included providing access to the land on the west of Main North Road by extending the shoulder/merge lane to provide access and a right turn bay to turn into the eastern leg.

Though this option provided access to the B6 zoned land, a safer cycle facility and met the safety objectives it would not, however, meet the capacity objectives.

(c) Three (3) leg traffic signals

The signalisation of the existing three approaches of the intersection meets the objectives of the project.

Developments either side of the Main North Road are very conceptual and it is difficult to know what will eventually happen on these sites, therefore the fourth leg at the intersection was not considered to be crucial.

It was already determined that adding the fourth approach to the signalised intersection (in the future - as was the proposal in Option (b) would reduce the capacity of the intersection. Extra computer modelling showed that alternative access to the B6 zoned land could be provided by a second set of signals at Link Road or offset "T" intersections at some future time.

(d) The "Do Nothing" option was not considered as it would not address any of the objectives of the project.

#### **FINANCIAL AND LEGAL CONSIDERATIONS**

6. The total capital cost of signalising the existing three approaches to the intersection is being met by Transit NZ.
7. The Empire Road Off Ramp/Main North Road intersection is a safety improvement project and is programmed for construction in the 2004/05 year. The Council operational costs for this project are \$8,978 and consists of the Council's share in the consultants' fees and design, and additional survey and Geotech testing that the Council requested when investigating a fourth leg for access to adjoining land.

#### **STAFF RECOMMENDATIONS**

It is recommended that the Council approve the signalisation of the three existing approaches of the Empire Road Off Ramp/Main North Road intersection.