

**8. CLYDE ROAD/CREYKE ROAD/KOTARE STREET INTERSECTION
PROPOSED TRAFFIC SIGNALS**

RR 8709

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Corporate Plan Output: 9.5.54 Infrastructural Asset Improvements	

The purpose of this report is to obtain approval to remove the existing roundabout control and to install traffic signals at the Creyke Road/Ilam Road/Maidstone Road intersection.

BACKGROUND

It is proposed to install traffic signals at the intersection of Clyde Road, Creyke Road and Kotare Street to reduce the high delays and long queues presently occurring there during AM and PM peak periods. A plan showing the proposed layout of the traffic signals is attached.

The traffic signals publicity pamphlet was circulated in October 1998. Thirty seven replies were received with 24 for the signals and 13 against. Some comments from the replies accepting the proposed signals were:

The signals will reduce queue lengths during the AM and PM peaks making it easier to access residential properties.

There are more pedestrians now using the intersection. The signals will make it safer and easier for them to cross.

Replies from residents against the signals were:

Loss of car parking outside their houses.

The roundabout operates efficiently during off peak and weekend periods which is the majority of the time.

A report on the traffic signal proposal was presented to the Riccarton/Wigram and Fendalton/Waimairi Community Boards at their meetings on 17 and 18 November 1998.

TRAFFIC NETWORK

Creyke Road and Kotare Street are two lane minor arterial roads currently carrying approximately 12,000 vehicles per day. It is a link road from the west of the city and the Canterbury University to the city centre.

Clyde Road is classified as a collector and carries approximately 14,500 vehicles per day. This road links the north west of the city to Riccarton Road and is a major route to the University.

This intersection is presently controlled by a roundabout.

CRASHES

(a) Existing

In the five year period from 1993 to 1997 there have been 5 reported injury (2 serious and 3 minor) and three reported non-injury crashes. This equates to an injury rate of 1.0 crashes per year. Two of these crashes involved cyclists (1 serious and 1 minor).

During the five year analysis period there were no reported crashes involving pedestrians.

(b) Proposed Traffic Signals

The crash rate with traffic signals at this intersection is predicted to be 1.0 injury and 2.2 non injury crashes per year. This rate is based on an average from five similar (volumes and environment) signalised intersections in Christchurch.

The installation of signals will decrease the number of cycle crashes as well as making it safer for pedestrians.

DELAYS AND QUEUE LENGTHS

Average delays in seconds per vehicle for the existing roundabout and for the traffic signal option are shown in Table 1. These delays are from computer modelling as actual delays measured on site are difficult to obtain.

Existing queue lengths in metres are also shown bracketed in Table 1. These lengths were undertaken after the University closed for the year.

Table 1
Delays and Queue Lengths

<i>Peak</i>	<i>Approach Delays (seconds/vehicle)</i>			
	<i>Creyke</i>	<i>Clyde-south</i>	<i>Kotare</i>	<i>Clyde - north</i>
Existing Roundabout				
am	8	7.7	12.3	25.2 (350m)
off	19.6	9.8	8.1	7.1
pm	83.3	95	33.8	11.3
Traffic Signals				
am	12.5	14.2	7.3	15.8
off	9.8	8.9	8	7
pm	14.3	15.3	8	8.8

The delays from the computer model are using existing traffic volumes.

(a) Existing Roundabout

As shown in Table 1 vehicle delays are reasonable during off-peak times. Delays during the morning peak on the Clyde Road (north) approach are averaging 25 seconds per vehicle. The queue on this approach reaches about 350 metres in length.

Evening peak delays on Creyke Road and Clyde Road (south) approaches are high, averaging 83 to 95 seconds per vehicle.

(b) Proposed Traffic Signals

With traffic signals, delays to vehicles during the morning and evening peak periods will decrease compared with existing delays. This decrease will be significant on Creyke Road and Clyde Road (south approach) during the evening peak as the delays will drop from about 90 seconds per vehicle to 15 seconds per vehicle. Queue lengths during these periods will also reduce.

The delays during the off peak periods will be similar to the existing delays.

B/C ANALYSIS

The calculated Benefit/Cost ratio which includes the linking with the signals at the Creyke Road/Ilam Road/Maidstone Road intersection is 5.0. The work has a cost estimate of \$190,000 and has been accepted by Transfund New Zealand for subsidy and is currently in the 1998/99 Rooding Programme. Construction is scheduled to start in January 1999.

CONCLUSION

The injury crash rate with the installation of traffic signals is predicted to be similar to the existing roundabout at 1.0 crashes per year although the serious crashes will decrease.

The signals will decrease the number of cycle crashes as well as making it safer for pedestrians.

Traffic signals will reduce the delays and queue lengths to vehicles during the morning and evening peak periods. The delays during the off peak periods will be similar to the existing delays.

The estimated cost of this project is \$190,000. A Benefit/Cost ratio of 5.0 has been achieved resulting in financial assistance from Transfund New Zealand. Construction is scheduled to start in January 1999.

A report on the traffic signal proposal was presented to the Riccarton/Wigram and Fendalton/Waimairi Community Boards at their meetings on 17 and 18 November 1998.

In response to the invitation to comment the Fendalton/Waimairi Community Board resolved that the proposed traffic signals at the Creyke/Clyde/Kotare intersection including a provision for cyclists and pedestrians be supported, but that other design elements which will provide benefits for all road users, such as slip lanes and right turn green arrows, also be investigated.

The proposal was unanimously endorsed by the Riccarton/Wigram Community Board.

Recommendation: *Intersection Control*

1. That the “Give Way” controls at the intersection of Clyde Road, Creyke Road and Kotare Street be rescinded.
2. That “Traffic Signals” be used to control traffic at the Clyde Road, Creyke Road, Kotare Street intersection.
3. That a “Give Way” sign be erected against Creyke Road traffic turning from the slip lane left into Clyde Road at the Clyde Road, Creyke Road, Kotare Street intersection.

No Stopping Restrictions

4. That the stopping of vehicles be prohibited at all times at the following locations

Clyde Road

- 4.1 The north west side of Clyde Road commencing at the Creyke Road intersection and extending 64 metres in a southerly direction.
- 4.2 The south east side of Clyde Road commencing at the Kotare Street intersection and extending 57 metres in a southerly direction

4.3 The north west side of Clyde Road commencing at the Creyke Road intersection and extending 128 metres in a northerly direction

4.4 The south east side of Clyde Road commencing at the Kotare Street intersection and extending 67 metres in a northerly direction.

Creyke Road

4.5 The north side of Creyke Road commencing at the Clyde Road intersection and extending 43 metres in a westerly direction.

5. That all previous underlying no stopping restrictions in conflict with 3.1 through 3.5 above be rescinded.