

13. AKAROA STREET/HILLS ROAD INTERSECTION SAFETY IMPROVEMENTS

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PURPOSE OF REPORT

1. The purpose of this report is to seek the Board's approval to proceed to final implementation of safety improvements at the intersection of Hills Road and Akaroa Street.

EXECUTIVE SUMMARY

2. Community concern has been raised over the crashes occurring at the Akaroa Street/Hills Road intersection, the failure to observe the existing Give Way control against the Hills Road north-bound traffic, and the speed at which vehicles are negotiating the intersection.
3. After assessing the range of issues at this intersection, the objectives for the work were established as:
 - Improve the safety of motorists entering and exiting this intersection.
 - Improved safety for pedestrians.
 - Clearly define priorities for turning traffic.
 - Reduce the speed at which motorists negotiate the intersection.
4. In addition, all proposals needed to be considered as a short term treatment to address the current and future safety issues and result in minimum write-off of existing assets prior to any future alterations from northern access proposals.
5. An initial proposed scheme plan was distributed for consultation. However, concerns were raised by residents, Land Transport New Zealand, and Council staff that the proposal would not fully address all safety issues. Therefore, a further review of possible options was undertaken, and a new option was distributed in August 2005.
6. The new option will 'T' Hills Road (north-west/south-eastern arm) with Hills Road (north/south arm) and Akaroa Street (northeast/south-western arm), as a priority-controlled intersection with no slip lanes. The design will incorporate cycle lane facilities, pedestrian crossing facilities and ensure appropriate/safe vehicle crossing locations. The elimination of a slip lane and realignment of the intersection will resolve safety issues, particularly those generated from the speed of entry to the intersection.

FINANCIAL AND LEGAL CONSIDERATIONS

7. The safety improvement works for the intersection of Akaroa Street and Hills Road is programmed in the Transport and City Streets Unit's capital programme, for implementation in 2005/06 financial year. The estimated cost of this project is \$65,000.
8. There are no legal implications for this project.

STAFF RECOMMENDATIONS

It is recommended that the Community Board: -

- (a) Approve the works as shown on Plan TP 170202 for implementation.
- (b) Approve the following traffic restrictions:
 - (i) That the stopping of vehicles be prohibited at any time on the west side of Hills Road, commencing at its intersection with Whitehall Street and extending in a northerly direction for a distance of 95 metres.

- (ii) That the stopping of vehicles be prohibited at any time on the east side of Akaroa Street, commencing 28 metres south of the intersection with Dawe Street and extending in a southerly direction for a distance of 140 metres.
- (iii) That the stopping of vehicles be prohibited at any time on the west side of Akaroa Street, commencing at the common boundary of 15 and 17 Akaroa Street and extending in a southerly direction and around the corner into Hills Road for a distance of 95 metres.
- (iv) That the existing give way control on Hills Road against north-bound traffic be removed.

CHAIRPERSON'S RECOMMENDATIONS

That the staff recommendation be adopted and temporary signage warning of the new intersection layout installed once the intersection is completed.

BACKGROUND ON AKAROA STREET HILLS ROAD INTERSECTION SAFETY IMPROVEMENTS

9. Hills Road is a minor arterial (14 metres wide) south of Akaroa Street and a collector road (13.0 metres wide) north of this intersection. Akaroa Street is a minor arterial and is 10.5 metres wide. The Orbiter bus travels along Hills Road. As there are no stops within the project area, the bus service will not be affected by the proposal. The average daily traffic volumes for these streets are:

Akaroa Street:	12,800	adt (2005)	
Hills Road:	17,800	adt (2005)	north of Aylesford Street (south of Akaroa Street)
	4,800	adt (2005)	north of Akaroa Street

10. There have been four crashes recorded at the Akaroa Street/Hills Road intersection for the 5 year period between 1999 and 2003. Two crashes involved loss of control (south-bound on Hills Road). A right turner from the side street (Hills Road north) failed to give way to north-bound traffic. A pedestrian crossing Hills Road in a west-bound direction was hit by a south-bound vehicle.
11. The common complaint received from the public is that vehicles travelling north on Hills Road (i.e. turning from the minor arterial into the collector road) are failing to give way to right turning traffic from Akaroa Street. During a site visit in October 2004, several of those conflicts could be observed. The high vehicle speeds on Hills Road are a contributing factor to this conflict, as drivers in breach of the priority find it hard to stop in time if required. Despite being an observed risk however, there are no reported crashes based on this problem.
12. Akaroa Street is narrower than Hills Road, and there are a considerable number of right turners from Akaroa Street. Those drivers waiting in the centre of the road are vulnerable to rear end crashes. Again, there are no reported crashes based on this problem.
13. Initial consultation with the residents, property owners, local schools, churches, and businesses started in February 2005 with the distribution of a publicity leaflet (with concept plan TP 170201), and eight responses received. Technically, the proposal offered a workable treatment however, feedback was generally negative, with the perception that the option would not sufficiently address the safety concerns at the intersection.
14. In response to this feedback, further investigations were made into movements and risks at the intersection, and future developments, their timing, and their likely effects on traffic movements through this intersection. This resulted in a new concept plan (TP 170202) being drawn.
15. Community consultation on the later option was undertaken in August 2005 with the distribution of a new publicity pamphlet. Approximately 130 households, and other interested groups, were consulted, of which four responded. Half of the respondents were happy with the proposal and were keen to see it proceed.
16. The negative issues that arose, and the team response to each, are summarised as follows:

Concern	Description	Response
Give Way	Why not have a Give Way on the road between Akaroa Street and Hills Road.	A Give Way restriction had been installed against the left turn from Hills to Hills. It has not proved effective due to non-observance by drivers. To relocate this Give Way to the right turn from Akaroa to Hills would create a very similar situation that should not be repeated.
Parking	It gives no parking to 13 houses.	The proposed no stopping restrictions are required to allow the safe and efficient movement of traffic in all directions.
Traffic Lights	Having traffic lights would be more of an advantage. During peak traffic you are waiting a considerable amount of time to try and cross Hills Road.	Traffic lights were not considered, as a low cost effective interim solution was needed to address safety concerns at this location. The completion of the Northern Arterial will greatly affect future traffic flows and further works will be addressed at that time.

17. The preferred option removes the thoroughfare to the west of the central island in the intersection outside No. 307 Hills Road. This will result in drivers intending to turn left from Hills Road (north-bound) into Hills Road (north-west bound) to slow down for a sharp left turn around the existing island. The carriageway to the west of the island (previously the slip lane) will effectively become a cul-de-sac, servicing properties 307, 309 and 311 Hills Road. It is further proposed to construct a splitter island on the Hills Road north-west approach, including a pedestrian refuge. A short length of footpath is proposed for the existing island. Hence, there will be a pedestrian facility crossing the Hills Road north/west approach for the first time. The crossing point is located back from the limit line further than usual to achieve good intervisibility to all approaches.
18. This proposal will improve the safety of the intersection in several ways.
 - a) Motorists will no longer be able to turn left from Hills Road into Hills Road at speed. They will have to slow to negotiate the realigned intersection. This lessens the likelihood of loss of control crashes as well as potential crashes when residents of 307, 309 and 311 Hills Road turn into or out of their driveways.
 - b) It greatly lessens the potential for motorists to fail to give way when executing the above mentioned turn.
 - c) The proposed flush median will allocate some road space to right turners from Akaroa St, who at present are at risk of being rear-ended.
 - d) In addition, the expected reduction in vehicle speeds discussed in the next section is expected to reduce both severity and occurrence of crashes, especially loss of control.
 - e) The introduction of a pedestrian crossing treatment reduces risks to pedestrians.

Overall, this proposal addresses all four of the reported crash types. It also addresses the risks (identified above), for which there are currently no reported crashes.

19. The layout does increase the potential for rear-end crashes on Hills Road (north-bound), as left turners now have to give way to opposing right turners. These collisions may occur if left turners slow suddenly and unexpectedly in front of proceeding straight-through traffic. A potential increase in nose-to-tail crashes is often an undesirable consequence of intersection changes. This needs to be accepted, as the alternative crash types that the proposal aims to address (e.g. loss of control, right angle crashes) are generally of a higher degree of seriousness. That is, the proposal may introduce a new crash type, but this crash type occurs less often and does generally not result in injuries.
20. The right turning volumes from south-bound Akaroa Street traffic onto Hills Road will not create a problem in terms of north-bound Akaroa Street traffic being delayed. This is due to the turning volumes concerned being low and straight through traffic having the road width available to pass a left turner safely if necessary. The option of a left turn lane was considered however, this option was rejected as one of the existing problems with the site was the high speed of vehicles turning left from Hills Road onto Hills Road.
21. The proposal sees a minimal amount of physical works, with most of the changes concentrating on road markings. It is necessary to landscape the closure of the thoroughfare, so that motorists familiar with the intersection find a change in visual cues. The proposal does not pre-empt the pending reconstruction of the intersection, which is expected to occur in conjunction with the development of the northern arterial.

OPTIONS

22. Three options were assessed as part of Akaroa Street/Hills Road intersection safety improvements as follows:
 - a) Maintenance of the status quo. This options is not preferred as it will fail to address any of the safety concerns for this intersection.
 - b) Construction of a pedestrian island in Hills Road, installation of a Give Way sign against traffic right turning off Akaroa Street onto Hills Road, and the installation of cycle lanes through the intersection as shown on plan TP 170201 attached.
 - c) Construction of a pedestrian island in Hills Road, closure of the left turn slip lane to vehicular traffic travelling north on Hills Road, the installation of a splitter island and cycle lanes through the intersection as shown on plan TP 170202.

PREFERRED OPTION

23. Option c was developed as the preferred option following adverse feedback to option b. The final scheme plan consists of the following elements:
- New no stopping lines will be installed at the intersection.
 - New kerb, channel and footpath will be constructed in Hills Road to link in with existing kerb and channel outside number 307 Hills Road and the existing traffic island to close the left turn lane in Hills Road.
 - A pedestrian island will be installed in Hills Road outside No.s 307 and 318 with pedestrian cut-downs in the existing kerbs.
 - A footpath will be constructed across the existing island.
 - A splitter island will be installed in Hills Road at its intersection with Akaroa Street.
24. The preferred option (refer Attachment 2) satisfies the project aim and objectives as follows:
- Improve safety for motorists entering and exiting the intersection - the reduction of speed of vehicles using this intersection will increase safety. The reduced through-traffic lane width will provide some certainty and uniformity of vehicle movements through the intersection.
- Clearly define turning priorities for turning traffic - the new intersection will clearly define turning traffic priorities and reduce non compliance with the traffic regulations.
- Improve safety for pedestrians – the proposed footpath and crossings points will make safer crossing points and shorter crossing distances for pedestrians.
- Reduce the speed at which motorists negotiate the intersection – the geometry changes to the overall intersection and the slip-lane removal will reduce vehicle speeds.
25. It is acknowledged that there was a low response to the consultation leaflet for this latest option for the intersection proposal. The consultation to the previous option, which prompted further investigation received more feedback than the latest proposal. The reduced consultation response is implied to indicate that the final option has a greater level of support than the previous version.
26. It is also acknowledged that this proposed roading change removes parking from the frontage of 12 properties. To generate sufficient road space for turning vehicles requires the removal of parking (as shown in the attachment). This parking removal is common to both options, and is, unfortunately, unavoidable for the current roading situation at this intersection (particularly given the narrowness of Akaroa Street). All properties for which no stopping is proposed were delivered consultation leaflets.
27. The preferred option (refer Attachment 2) has been selected for the following reasons:
- a) It best satisfies project aims and objectives from the options considered.
 - b) It has a reasonable degree of community support and includes community suggested items.
 - c) Allows for future alterations to be done at reasonable costs as the Northern Arterial routes are developed.