

4. 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 north-bound traffic on Hills Road; 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 follows:
 - 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 in March 2005. However, concerns were raised by stakeholders that the proposal would not fully address all of the safety issues. Therefore, a further review of possible options was undertaken and a new option was distributed in August 2005. This was presented to the Shirley/Papanui Community Board in April 2006 for approval. However, the Board requested that a further option utilising the existing left turn north-bound lane from Hills Road be investigated. This investigation has been completed (see attachment 3) and the outcome was an option which resembled the original proposed option with extended traffic island and build-out. The option was dismissed due to the objectives not being met in terms of reducing the speed at which motorists negotiated the intersection and improving the safety for motorists and pedestrians.
6. The preferred option remains Option 3 which was presented in April 2006 as this design incorporates cycle lane facilities, pedestrian crossing facilities and ensures 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 Greenspace Unit's capital programme for implementation in the 2006/07 financial year. The estimated cost of this project is \$65,000.
8. Community Board resolutions are required to approve the traffic restrictions.

STAFF RECOMMENDATIONS

It is recommended that the Community Board:

- (a) Approve the works as shown attachment 2 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

For discussion.

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 bus stops within the project area, the bus service will not be affected by the proposal. The average daily traffic (“ADT”) 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 five 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 significant 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 the concept plan in attachment 1), and eight responses were received. Technically, the proposal offered a workable solution. 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 (attachment 2) being developed.
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.

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 street 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. This was part of the first option consulted on and subsequently rejected.
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.

16. 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 visibility to all approaches.
17. 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 (south) into Hills Road (north) at speed. They will have to slow down 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 Street, 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 crashes. It also addresses the risks (identified above), for which there are currently no reported crashes.

18. 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. The proposal may introduce a new crash type, but this crash type occurs less often and does not generally result in injuries.
19. 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, but 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.
20. The proposal results in a minimal amount of physical works, with most of the changes being 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 proposed northern arterial route (once constructed) will have an influence on traffic volume and flow direction on both Hills Road and Akaroa Street. Without knowledge of the future road/intersection design requirements, it is not possible to develop options that will be compatible with these future needs.

OPTIONS

21. Four options were assessed as part of Akaroa Street/Hills Road intersection safety improvements as follows:

Option 1

Maintain the status quo. This option means that no capital works will be undertaken at the Akaroa Street/Hills Road intersection. This would retain the intersection and road environment in its existing condition.

Option 2

Construction of a pedestrian island in Hills Road, installation of a Give Way against traffic turning right off Akaroa Street onto Hills Road, and the installation of cycle lanes through the intersection as shown in attachment 1.

Option 3

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 in attachment 2.

Option 4

Construction of a pedestrian island in Hills Road, installation of a Give Way against traffic turning right off Akaroa Street onto Hills Road, and the installation of cycle lanes through the intersection. The extension of the existing island and a build-out from the existing kerb line outside 307 Hills Road as shown in attachment 3.

OPTION ASSESSMENT

22. Shortfalls of the options are:

Option 1

This option would be inconsistent with the Community Outcomes outlined in the LTCCP, and would be inconsistent with Council strategies, particularly the Road Safety Strategy. Therefore, it is considered that it would be inappropriate to maintain the status quo because of the opportunity to ensure an efficient, safe and sustainable transport system within this area of the city.

Option 2

Traffic management measures will be installed which are very likely to be removed again when the intersection is rebuilt as part of the northern arterial. The traffic entering the southern junction from Hills Road still has the potential to do this at a relatively high speed. Retaining the southern access into Hills Road creates an extra conflict point for the intersection; this conflict point could be removed by closing off the southern access. There is also the potential for right turners into Hills Road from Akaroa Street to use this intersection to avoid the Give Way lines at the intersection to the north.

Option 4

Traffic management measures will be installed which are very likely to be removed in the future when the intersection is rebuilt as part of the northern arterial project. Retaining the southern access into Hills Road creates an extra conflict point for the intersection; this conflict point could be removed by closing off the southern access. There is a potential for right turners into Hills Road from Akaroa Street to use this intersection to avoid the Give Way lines at the intersection to the north. This conflict point could be removed by closing off the southern access. The traffic entering the southern junction from Hills Road still has the potential to do this at a relatively high speed.

PREFERRED OPTION ASSESSMENT

23. Option 3 was developed as the preferred option following adverse feedback to Option 2. The final scheme plan consists of the following elements:
- 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 (south) outside numbers 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 (north) at its intersection with Akaroa Street.
 - New no stopping lines will be installed at the intersection.
24. The preferred option (attachment 2) satisfies the project's aims 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 Option 3. The consultation for the previous option, which prompted further investigation, received more feedback than the latest proposal. The reduced consultation response could imply that the final option has a greater level of support than the previous version.
26. To generate sufficient road space for turning vehicles requires the removal of parking (as shown in the attachment). This parking removal is common to Options 2, 3 and 4, and is unfortunately unavoidable for the current roading situation at this intersection (particularly given the narrowness of Akaroa Street). However, as the majority of the on-street parking is opposite the intersection, parking here is deemed illegal under the NZ Road User Rules and should not currently be taking place. All proposed no stopping restrictions conform to the Christchurch City Council Parking Strategy. 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 the project's 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.

OPTIONS

13. The Community Board has three options available on each of the two requests:
 - (a) To grant a full allocation of the requested amount.
 - (b) To grant a partial allocation of the requested amount.
 - (c) To decline the applications.

PREFERRED OPTION

14. In each case, the student's participation in the programme will enable them to expand and develop their skills and personal growth.
15. In each case, the students have shown initiative in raising funds towards the pursuit of their endeavours.
16. For these reasons, Option (a) in each case is preferred.