

## 7. SIGNALISED INTERSECTION – LANGDONS ROAD/MAIN NORTH ROAD/MARY STREET – SAFETY AUDIT REPORT

<b>General Manager responsible:</b>	General Manager City Environment, DDI 941-8608
<b>Officer responsible:</b>	Transport and Greenspace Manager
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### PURPOSE OF REPORT

1. The purpose of this report is to provide information requested by the Shirley/Papanui Community Board, and to seek the Boards recommendation to Council that they effect changes to the Langdons Road/Main North Road/Mary Street traffic signals, specifically around the installation of a right turn arrow turning from Main North Road onto Langdons Road.

### EXECUTIVE SUMMARY

2. The board received a deputation from Helen Durelos at the meeting held on 21 May 2008, expressing that a safety audit be carried out at the intersection of Langdons Road/Main North Road/Mary Street. The purpose of this safety audit was borne from a concern that there is a danger to pedestrians crossing the signalised pedestrian crossing on the north leg of this intersection.
3. Following extensive site inspections and monitoring, staff submitted a report to the Board meeting held on 31 May 2010, recommending that the pedestrian crossing point on the north side of the intersection be removed immediately, and that the whole intersection be reviewed to look at options to further improve safety.
4. The Board supported this request, and passed it through to Council to endorse. The Board and Council then requested that consideration be made for the installation of a green turning arrow from Main North Road onto Langdons Road. Generally the installation of Right Turn Signals has a disadvantage to the general operation and efficiency of the intersection. However, in some cases, such as locations with a disproportionately heavy turning movement, or bad intersection geometry, some benefits may be achieved; this is generally still at the expense of efficiency on at least one approach.
5. Staff considered options for this intersection, and developed a brief for Aurecon consultants to investigate. The following factors and requirements were considered:
  - (a) No noticeable impact to traffic flows on Main North Road,
  - (b) Better pedestrian protection across each marked crossing (red arrow protection),
  - (c) A Right Turn Green Signal (green arrow) from Main North Road into Langdons Road,
  - (d) Reduced confusion of vehicles going straight through, mixed with right-turning vehicles on Langdons Road,
  - (e) Planned changes to the 'give way' rule.

Staff also permitted Aurecon to consider reducing the level of service for vehicles on Mary Street, as this is classified as a local road only, and does not justify the amount of green time it currently receives.

6. Aurecon considered all the aspects of the brief, and produced an 18 page report. The report from Aurecon is attached (**Attachment 1**) to this report.
7. The Aurecon report utilised the existing sParamics model which was developed for the bus priority project to allow full modelling of the impact to changes at this intersection, and other nearby intersections. Vehicle count and movement data was based on a count undertaken in September 2008. Baseline count data from elsewhere in the city before the February earthquake indicates this data is not likely to have changed significantly between September 2008 and January 2011.

8. The Aurecon report suggested three options. These are:
  - (a) Option 1 – Split approach phasing with an exclusive Right Turn lane and a shared through and left turn lane on Langdons Road.
  - (b) Option 2 – Option 1 with the addition of an exclusive Right Turn lane and a shared through and left turn lane on Mary Street.
  - (c) Option 3 – Option 2 with the addition of an exclusive right turn phase into Langdons Road, limiting the right turn phase and the Mary Street phase to a maximum of 11 seconds.
9. The report shows that it will be possible to change the lane configuration with no reduction to service for the vehicles on Main North Road. With the new lane configuration on Langdons Road, there will be almost no reduction in service to this traffic. In fact, it is likely there would be an improvement to the safety of pedestrians crossing Main North Road at the south side of the intersection as the Langdons Road traffic will be held with a red arrow. As these right turning vehicles do not have to give way to straight through traffic from Mary Street, they will be able to turn freely once the pedestrians have cleared, therefore increasing the level of service to this movement. Unfortunately, to implement this proposal, we would need to remove the final section of existing cycle lane on Langdons Road, as there would be no safe way to protect straight through cyclists while the left turn arrow is running on Langdons Road.
10. Due to the presence of the large tree on the south side of the Mary Street approach, we will not be able to increase the road width for an extra lane, as recommended in the Aurecon report. This means that it will only be possible for about half the number of vehicles to exit from Mary Street, compared to current levels. Implementing this recommendation will help discourage drivers from using Mary Street and the surrounding residential areas for rat-running. In the event that the Police need to make a quick exit from the Police Station, they can do this at any time with sirens sounding. Given the benefits to road users from other approaches, any disadvantages to drivers here would be compensated for in the improvements in pedestrian safety and wait times at other legs of the intersection.
11. The attached (**Attachment 2**) plan shows the proposed new layout for this intersection.
12. Since the February earthquake, there has been increased pressure on the right turn from Langdons Road, with short peak queuing reaching back through the Langdons Road roundabout. This new layout is likely to mitigate the effects of this queuing.

#### **FINANCIAL IMPLICATIONS**

13. The estimated cost of this proposal is approximately \$35,000.

#### **Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?**

14. The installation or removal of road markings, signs, and traffic signals is within the LTCCP Streets and Transport Operational Budgets, and could be programmed to be completed in the 2011/12 financial year.

#### **LEGAL CONSIDERATIONS**

15. Subject to the Local Government Act 1974 and 2002. Subject to the Land Transport Rule 54002, Traffic Control Devices.
16. The Community Boards do not have the delegated authority from the Council to make alterations to traffic control facilities on an arterial road. Therefore, the Community Board must make a recommendation to Council.

#### **Have you considered the legal implications of the issue under consideration?**

17. As above.

#### **ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS**

18. Aligns with the Streets and Transport activities by contributing to the Council's Community Outcomes - Safety and Community.

#### **Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?**

19. As above.

#### **ALIGNMENT WITH STRATEGIES**

20. The recommendations align with the Council Strategies including the Pedestrian Strategy 2001, Road Safety Strategy 2004 and the Safer Christchurch Strategy 2005.

#### **Do the recommendations align with the Council's Strategies?**

21. As above.

#### **CONSULTATION FULFILMENT**

22. As there are no proposed changes to the kerb-side parking layout, and the proposal will increase pedestrian safety, no consultation has been carried out on this proposal.

#### **STAFF RECOMMENDATION**

That the Shirley/Papanui Board recommend to Council that it approve the following changes at the Langdons Road/ Main North Road/ Mary Street intersection –

- (a) Implementation of Option 3 and the recommendations of Aurecon report 213384-001-01,
- (b) That Mary Street remains as a single lane north-westbound,
- (c) That the new road marking layout is installed according to the **attached** proposed marking plan (TS102901.DGN 2010-11-22).