

## 27. ALDWINS ROAD SPEED LIMIT

|                                     |  |
|-------------------------------------|--|
| <b>General Manager responsible:</b> | General Manager City Environment, DDI 941-8656                             |
| <b>Officer responsible:</b>         | Unit Manager, Transport and Greenspace                                     |
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### PURPOSE OF THE REPORT

1. The purpose of this report is to provide information that will enable the Board and the Council to decide upon the retention or otherwise of the existing 60 km/h speed limit along Aldwins Road between Ferry Road and Linwood Avenue. The report will also provide options to improve road safety along Aldwins Road at Linwood College. These options include a discussion on a 40 km/h School Zone as requested.

### EXECUTIVE SUMMARY

2. The speed limit along Aldwins Road was increased from 50 km/h to 60 km/h on 1 February 2004. The 60 km/h speed limit complies with the guidelines for arterial route speed limits pursuant to the Land Transport Rule – Setting of Speed Limits 2003.
3. Actual 85<sup>th</sup> %ile (59 km/h) and mean speeds (53.6 km/h) along the section of Aldwins Road south of Bass Street are lower than those recorded in Ensors and Buckleys Roads which form part of an arterial link from SH 74 Brougham Street to Pages Road. An operating speed of between 50 and 60 km/h is common on most urban multi-lane arterial roads in Christchurch regardless of whether the speed limit is 50 or 60 km/h. The operating speed of Aldwins Road south of Bass Street is at the lower end of the scale.
4. 40 km/h School Zones are very effective but haven't yet been used in conjunction with pedestrian signals. They have been installed where students have to make the decision to stop the moving traffic at a School patrol crossing point or there are limited facilities.
5. The speed camera site outside the Parkwood Rest Home opposite Linwood College is a valuable deterrent. The speed camera site should be retained.
6. Crashes within 200 metres of the pedestrian signals outside Linwood College have been analysed. Speed was not cited as a factor in any of these events. A total of 15 crashes are recorded in the five year period 2001 to 2007, only six of which occurred during school time. Pedestrian behaviour contributed to three out of the six collisions.
7. Many people, including students from Linwood College, choose to cross the four lane roadway within 100 metres of the pedestrian signals. The installation of pedestrian barriers in the section of median along the College frontage would stop people crossing the roadway within the 100 metres 'danger zone' either side of the pedestrian signals.
8. Activating mechanisms for the pedestrian signals can be made more user friendly and motorists could be provided with additional indicators to ensure that they know when the signals are about to change to red.
9. The construction of a pedestrian barrier and a passive device for activating the pedestrian signals would provide the best solution for improving safety along this section of Aldwins Road.

### Attachments

10. The following attachments are appended to this report:
  - (a) **Attachment 1:** Table 1 – Aldwins Road vehicle speed data and notes;
  - (b) **Attachment 2:** Weekly mean and 85<sup>th</sup> %ile speed survey graphs;
  - (c) **Attachment 3:** Table 2 – Mean and 85<sup>th</sup> %ile operating speeds and notes and Table 3 – Aldwins Road pedestrian survey at Linwood College and notes;
  - (d) **Attachment 4:** Table 4 – Hierarchy of treatments for pedestrian crossing points.

11. **Attachments 1 and 2** provide information on vehicle speeds along Aldwins Road in the vicinity of Linwood College.
12. **Attachment 3** provides information on speed limits in New Zealand extracted from the Land Transport Rule: Setting of Speed Limits 2003, and details of a pedestrian survey in Aldwins Road at Linwood College with accompanying notes.
13. **Attachment 4** provides a commentary on the hierarchy of treatments used to improve pedestrian safety on roads. Examples include relevant traffic control devices used at schools in Christchurch and a new initiative, (flashing yellow warning lights) under trial in Christchurch and Auckland.

#### **FINANCIAL IMPLICATIONS**

14. Depending on the options chosen, it is estimated that the first order costs for the work involved to improve traffic safety in Aldwins Road would be:
  - (a) Option 1: Status quo – do nothing. This option fails to address the safety issues along the section of Aldwins Road at Linwood College.
  - (b) Option 2: Reducing the speed limit from 60 km/h down to 50 km/h will incur costs in the order of \$6,000 for new speed limit signs. Existing operational budgets would be used to cover these costs.
  - (c) Option 3: Introducing a 40 km/h School Zone along the section of Aldwins Road between Matlock Street and Marcroft Street will incur costs in the order of \$38,000. Additional costs may be incurred for either repositioning existing speed limit signs or replacing them with new 50 km/h signs as in Option 2. Priority funding for a 40 km/h School Zone would be considered along with similar zones, outside other schools in the city.
  - (d) Option 4: Constructing a pedestrian barrier in the Aldwins Road median along the Linwood College frontage either side of the pedestrian signals would cost approximately \$24,000. Changes to the signals and the installation of passive pedestrian detectors would cost approximately \$15,000. Priority funding for this work (\$39,000) would be considered alongside other subsidised safety improvement works in the city.
  - (e) Option 4a: Option 4, with flashing yellow warning lights similar to those on the pedestrian crossings in Tuam Street outside Civic Offices and in Hereford Street adjacent to Westpac Lane (but being actuated by the signals) would add approximately \$15,000 and raise the cost of this option to \$54,000. Priority funding for this work (\$54,000) would be considered alongside other subsidised safety improvement works in the city.
  - (f) Option 5: Improved activating mechanism for detecting the presence of pedestrians to make the signals more user-friendly. This is estimated to cost \$15,000 and would be considered alongside other subsidised safety improvement works in the city.

#### **Do the Recommendations of this Report Align with 2006-16 LTCCP budgets?**

15. The cost to purchase and install traffic signs is within the LTCCP Transport and Greenspace operational budgets. New projects would need to be generated to install a 40 km/h School Zone or to construct a pedestrian barrier in the Aldwins Road median along the Linwood College frontage either side of the pedestrian signals, alter the detection systems at the signal controlled pedestrian crossing and/or install flashing yellow warning lights on the approaches to the crossing.

#### **LEGAL CONSIDERATIONS**

16. Legal considerations for Options 2 and 3 include changes to the Council's Speed Limit Bylaw. The installation of flashing yellow warning lights on the approaches to the pedestrian crossing (Option 4a) would require Land Transport New Zealand sanctioning by way of a traffic control devices trial. All other work could be carried out by the Council following consultation with stakeholders including the New Zealand Police.

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

17. The issue is traffic safety that the Council is duty bound to address. As a road controlling authority, the Council has responsibilities concerning the management of traffic and the installation and maintenance of traffic control devices including speed limits and pedestrian signals.

**ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS**

18. All options align with Transport and Greenspace 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 2006-16 LTCCP?**

19. The recommendations contribute to improve the level of service for safety and access.

**ALIGNMENT WITH STRATEGIES**

20. Align with the *Christchurch Road Safety Strategy* and *Safer Christchurch Strategy*.

**Do the recommendations align with the Council's strategies?**

21. The recommendations align with the *Christchurch Road Safety and Safer Christchurch Strategies*.

**CONSULTATION FULFILMENT**

22. No consultation has been carried out on the options proposed. Consultation with Linwood College, Parkwood Rest Home, the local community and New Zealand Police and, most likely, Land Transport New Zealand needs to be carried out once the Council has decided upon the options that should be canvassed with the community. The request for a report on the speed limit along Aldwins Road and improvements to safety outside Linwood College originated from the Hagley/Ferrymead Community Board.

**STAFF RECOMMENDATION**

It is recommended that the Council:

- (a) Not pursue Option 1 and Option 2.
- (b) Initiate discussions with key stakeholders to ascertain views on the Council proceeding with Options 3, 4, 4a and 5.
- (c) Consider the preferred option which should be costed, budgeted and consulted upon with the wider community.
- (d) Provide funding for the preferred option at the earliest possible opportunity.

**CHAIRPERSON'S RECOMMENDATION**

For discussion.

## BACKGROUND (THE ISSUES)

### Speed Limit

23. Speed has been cited as the main contributing factor to crashes that have occurred in Aldwins Road. The speed limit along Aldwins Road was increased from 50 km/h to 60 km/h on 1 February 2004. The 60 km/h speed limit complies with the guidelines for arterial route speed limits pursuant to the Land Transport Rule – Setting of Speed Limits 2003.
24. In some circumstances it may also be appropriate to set a 50 km/h speed limit on four lane arterial roads such as Aldwins Road.
25. The minimum recommended length for an arterial route speed limit of 60 km/hr is one kilometre. However, on a longer route such as the Ensors Road, Aldwins Road, Buckleys Road link from SH 74 Brougham Street to Pages Road, short sections of development where there are schools and rest homes can be accommodated within a higher speed limit than would normally be the case.
26. The section of Aldwins Road between Ferry Road and Harrow Street has been treated in this manner. Pedestrian activity is high at school times but relatively low at other times of the day and weekends.
27. Because of intensive pedestrian activity a 50 km/h speed limit has been retained along the sections of Aldwins Road and Buckleys Road between a point 100 metres south-west of Linwood Avenue and Russell Street through a shopping centre and bus interchange.
28. Actual 85<sup>th</sup> %ile (59 km/h) and mean speeds (53.6 km/h) along the section of Aldwins Road south of Bass Street are lower than those recorded in Ensors and Buckleys Roads. Mean speeds have risen (51.2 to 53.6 km/h) since the 60 km/h speed limit was installed in 2004. An operating speed of between 50 and 60 km/h is common on most urban multi-lane arterial roads in Christchurch regardless of whether the speed limit is 50 or 60 km/h. The operating speed of Aldwins Road south of Bass Street is at the lower end of the scale.
29. Reinstating the former 50 km/h speed limit along Aldwins Road may affect the 85<sup>th</sup> %ile and mean speeds. However, the operating speed would be unlikely to influence the safety record of this road. The differential either side of the mean speed would widen with some motorists unwilling to discipline themselves to drive at or close to the speed limit. More motorists would be likely to travel at speeds at the higher end of the scale making it more difficult for people crossing the road to judge the speed of approaching traffic. This can be a difficult enough task now. With two lanes of approaching traffic there is often a difference in the speed of vehicles in each lane.
30. During School hours vehicle speeds are moderated as a function of road network capacity. Refer to **Attachment 2**.

### Speed Camera

31. The speed camera site outside the Parkwood Rest Home opposite Linwood College is a valuable deterrent and, although few motorists are cited for speeding offences each month, the speed camera should be retained. Outside normal business hours in particular, motorists can be seen to check their approach speed and slow before accelerating again once they have passed through the site.
32. Data from the speed camera site for May 2007 reveals that the camera was deployed for a total of 11.85 hours. During this period the speed of 12,664 vehicles was checked and 12 photographs taken. In June 2007 the camera was deployed for 9.82 hours. The speed of 596 vehicles was checked and two photographs were taken. According to the records kept during these two months, 67% of drivers were travelling at speeds up to 60 km/h, 32% between 61 and 70 km/h and 1% over 70 km/h.

## Crash Record

33. Crashes within 200 metres of the pedestrian signals outside Linwood College have been analysed. Speed was not cited as a factor in any of these events. A total of 15 crashes are recorded in the five year period 2001 to 2007, only six of which occurred during school time.

| Crash ID | Location          | Movement                        | Comment  |
|----------|-------------------|---------------------------------|--|
| 2222159  | I Edmond Street   | AA (Changing lane)              |  |
| 2221662  | 300 s Ferry Road  | FE (Rear End at traffic lights) | Location in dispute. Records show kids running onto road chasing ball outside Linwood Collage. Front driver able to stop, driver behind following too close. |
| 2472425  | 50 s Harrow       | FE (Rear End at traffic lights) |  |
| 2422403  | 100 s Harrow      | NB (pedestrian Crossing)        | "Running heedless of traffic, failed to use pedestrian crossing when one within 20 m"  |
| 2522626  | 100 s Harrow      | NB (pedestrian Crossing)        | "Running heedless of traffic, failed to use pedestrian crossing when one within 20 m"  |
| 2574006  | I Marcroft Street | FA (Rear end)                   |  |

34. Pedestrian behaviour contributed to three out of the six collisions. Of these crashes, only two have involved pedestrians, one (2221662) involved children running onto road chasing a ball.
35. The only commonality is children entering road uncontrolled.

## Signal controlled pedestrian crossing

36. Many people, including students from Linwood College, choose to cross the four lane roadway within 100 metres of the pedestrian signals. After school, some students can be observed changing their minds after gaining a foothold on the median and returning to the side of the road they started out from. During a survey, one group of four students were observed to 'hold counsel' on the median pushing and shoving each other and moving back and forth across the two lane carriageway outside the College. This type of behaviour can intimidate or confuse drivers particularly if they are travelling along Aldwins Road when the vehicle phase at the adjacent pedestrian signals is green giving them right of way over pedestrians.
37. Before school and at quieter periods of the day, many people, including students, after selecting a gap in traffic, either cross within 100 metres of the pedestrian signals or on the crossing but without the 'Cross' signal. These people are reluctant to wait for the signal to cross and take the chance of crossing the roadway between gaps in approaching traffic. Some may not want to bother motorists with having to stop to give way to them and do not press the button to activate the pedestrian 'Cross' signal. Both practises are hazardous not only for the pedestrian but also for motorists approaching the crossing point. Police records state "Running heedless of traffic, failed to use pedestrian crossing when within 20 metres".
38. Pedestrian barriers in the section of median along the College frontage would stop people crossing the roadway within 100 metres of the pedestrian signals. Passive detection units to trigger the signals on the approaches to the crossing would leave people with little choice but to wait for the signals to change in their favour before crossing the roadway. Improved pedestrian behaviour would result and motorists would better understand the need to slow and yield right of way to people crossing the roadway. This work is recommended as it would serve to discipline pedestrians and make for a safer environment for all road users.

## 40 km/h School Zones

39. 40 km/h School Zones are very effective but haven't yet been used in conjunction with pedestrian signals. On Main North Road, a four-lane road at Belfast School, school patrols operate on Kea crossings, one on the eastern side and one on the western side. A 40 km/hr Speed Zone could be investigated further for Linwood College, leaving the pedestrian signals and speed camera in place. However if there were any benefits in such an option, then Linwood College would have to be ranked with all other schools in Christchurch.

## Traffic Volumes and Speeds

40. Traffic volumes are high but less than those recorded on many other Major Arterial Roads in the city. Weekday evening peaks (4 to 6pm) are busiest. However, weekday morning peak flows (8 to 9am) are matched by similar hourly flows between 11am and 4pm. The speed of vehicles passing Linwood College in the Morning School-Time is significantly lower than the rest of the day and in the Afternoon School-Time is lower than the average speed. See **Attachment 2**.

| Date      | Station                                  | 7 Day ADT | Peak hour flow            |
|-----------|--|-----------|---------------------------|
| July 2005 | Aldwins Road south of Bass Street        | 22,123    | 2,173 (Wednesday 4 – 5pm) |
| July 2005 | Aldwins Road south of Marlborough Street | 26,492    | 2,644 (Wednesday 4 – 5pm) |

## THE OBJECTIVE

41. To improve road safety along Aldwins Road in the vicinity of Linwood College and determine whether the existing 60 km/h speed limit is appropriate. A 40 km/hr School Zone was one suggested option.

## THE OPTIONS

### Option 1:

42. Maintain the Status Quo - Do Nothing.

### Option 2:

43. Reducing the speed limit from 60 km/h down to 50 km/h along Aldwins Road between Ferry Road and Linwood Avenue.

### Option 3:

44. Introducing a 40 km/hr School Zone along the section of Aldwins Road between Matlock Street and Marcroft Street.

### Option 4:

45. Constructing a pedestrian barrier in the Aldwins Road median along the Linwood College frontage either side of the pedestrian signals and introducing a passive device for actuating the signals.

### Option 4a

46. Option 4 but with flashing yellow warning lights similar to those on the pedestrian crossings in Tuam Street outside Civic Offices and in Hereford Street adjacent to Westpac Lane (but being actuated by the signals).

### Option 5

47. Improved activating mechanisms for detecting the presence of a pedestrian to make the signals more user-friendly.

## DISCUSSION

48. The 'do nothing' option would fail to address safety issues along the section of Aldwins Road at Linwood College.

49. The former 50 km/h speed limit along Aldwins Road should not be reinstated. The operating speed is unlikely to change and would be unlikely to influence the safety record of this road. If the speed limit was lowered, the differential either side of the mean speed would widen with many motorists unwilling to discipline themselves to drive at or close to the new speed limit. Many would be likely to be travelling at speeds at the higher end of the scale.
50. 40 km/h School Zones are very effective but haven't yet been used in conjunction with pedestrian signals. This option could be investigated further. However with signals controlling traffic and giving pedestrians the right of way, a 40 km/hr School Zone is not seen as a good investment. There are 165 schools in Christchurch, of which 22 have 40 km/hr School Zones. The remaining 143 have been ranked for 40 km/hr. To install a 40 km/hr at Linwood College where there is a signal controlled crossing would prevent higher ranking schools from having a 40 km/hr School Zone installed.
51. The speed camera site outside the Parkwood Rest Home opposite Linwood College is a valuable deterrent and should be retained.
52. Crashes within 200 metres of the pedestrian signals outside Linwood College have been analysed. Speed was not cited as a factor in any of these events. Pedestrians running onto the road has been cited as the cause of three of the six crashes.
53. Many people, (see survey figure **Attachment 3**) including students from Linwood College, choose to cross the four lane roadway within 100 metres of the pedestrian signals. Pedestrian barriers in the section of median along the College frontage would stop people crossing the roadway within the 100 metres 'danger zone' either side of the pedestrian signals. Constructing a pedestrian barrier in the Aldwins Road median along the Linwood College frontage either side of the pedestrian signals would cost approximately \$24,000. This is seen as the preferred option.
54. Activating mechanisms for the pedestrian signals can be made more user friendly and motorists could be provided with additional indicators to ensure that they know when the signals are about to change to red. Passive detection units to trigger the signals on the approaches to the crossing should be installed as part of any improvement works. Changes to the signals and the installation of passive pedestrian detectors would cost a further \$15,000.

#### **THE PREFERRED OPTION**

55. Option 4. This option would provide the greatest benefit for road safety.
56. Option 5 could also be undertaken in conjunction with Option 4.