

5. DYERS PASS /HACKTHORNE ROADS SAFETY IMPROVEMENTS AUDIT

General Manager responsible:	General Manager City Environment
Officer responsible:	Transport and City Streets General Manager
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PURPOSE OF REPORT

1. The purpose of this report is twofold: -
 - (a) To advise the Spreydon/Heathcote Community Board of the effects of recent safety improvement works to the Dyers Pass/Hackthorne Roads intersection and traffic issues in this area.
 - (b) To request the Spreydon/Heathcote Community Board to approve the installation of no stopping restrictions in Dyers Pass Road and Hackthorne Road to further improve safety for drivers exiting Hackthorne Road on the east side of the intersection, and kindergarten patrons entering Hackthorne Road no. 106's right-of-way.

EXECUTIVE SUMMARY

2. In 2004 the Spreydon/Heathcote Community Board requested a report regarding traffic management issues in the area of the Hackthorne/Dyers Pass Roads intersection. The firm of Montgomery Watson Harza was engaged to carry out an independent Post Construction Road Safety Audit to look at these issues and community traffic concerns for the section of Dyers Pass Road (between no.s 96 and 101) and Hackthorne Road (between no. 96 and Cashmere Primary School).
3. The report (distributed with the agenda) identified three locations where sight distances can be restricted by parked vehicles and was a significant safety concern as noted below. The three locations in order of significance are:
 - (a) Intersection of Dyers Pass Road with Hackthorne Road. Sight distance from the Hackthorne Road (east) approach is restricted looking south, up Dyers Pass Road. The worst situation from this approach is for drivers turning right; an estimated 100 vehicles per day turn right. To improve sight lines, removal of three standard carparks on the eastern side of Dyers Pass Road between Hackthorne Road and the bus stop should be considered. The bus stop at the end of these parks is normally only used to let passengers off for a maximum of thirty seconds, and the removal of the bus stop is therefore not justified. It needs to be noted that if this on-street parking is removed it will leave no on-street parking in Hackthorne Road in front of these shops/businesses.
 - (b) There is a single lane access to no.s 106 and 108 Hackthorne Road and the Kidsfirst Kindergarten Cashmere. Sight distance to the east is severely restricted by parked vehicles. An estimated 60-70 vehicles per day use this single-lane driveway. To provide adequate lines of sight for exiting drivers the installation of 20 metres of no-stopping lines to the east of this driveway (servicing no.s 106-108) should be considered.
 - (c) Access to no.s 113, 113A, 113B, 113C and 113D Hackthorne Road is via a single lane right-of-way. Parked vehicles restrict sight distances in the easterly direction. An estimated 50 vehicles per day use this driveway. To provide adequate lines of sight for exiting drivers the installation of no stopping lines between property no.s 113A and 115 should be considered. This would result in the loss of two on-street carparks.
4. The Transport and City Streets Unit wishes to acknowledge Mike Smith and his team from Montgomery Watson Harza for the quality of this report and the work they have put into it, and supports their findings.

FINANCIAL AND LEGAL CONSIDERATIONS

5. The cost to the Christchurch City Council is minimal (estimated cost \$550) and can be met within existing budgets.
6. There are no legal considerations associated with this project's preferred option aside from the resolutions outlined in the recommendations below.

BACKGROUND ON DYERS PASS ROAD/HACKTHORNE ROAD SAFETY IMPROVEMENTS AUDIT

7. Following the Spreydon/Heathcote Community Board's request on 29 June 2004 *"That officers investigate and report back to the Board regarding various traffic management issues in the Hackthorne Road/Dyers Pass Road area (including vehicle speed, visibility and competing parking demands) and consult with affected residents, businesses and community organisations (eg, school, shops and kindergarten)"*, the firm of Montgomery Watson Harza was engaged to carry out an independent Post Construction Road Safety Audit to look at traffic management issues and community traffic concerns for the section of Dyers Pass Road (between no.s 96 and 101) and Hackthorne Road (between no. 96 and Cashmere Primary School). The following is a summary of that report. This project has been twofold; one of investigation to check what issues, following recent traffic safety improvement work, (if any) still existed and secondly, to provide solutions to these issues. The ranking system adopted for safety issues/concerns is:
- (a) **Serious Concern:** a major safety concern that should be addressed and requires changes to avoid serious safety problems.
 - (b) **Significant Concern:** a significant safety concern that requires consideration of changes to improve safety.
 - (c) **Minor Concern:** a safety concern of lesser significance, but which should be addressed as it may improve overall safety.

Vehicle Speeds

8. Vehicle speeds were measured on all the approaches to the intersection of Dyers Pass Road with Hackthorne Road. The counts were undertaken during a peak period and an off-peak period for each approach to gauge the change in vehicle speeds over the day. The 85 percentile speeds were then used to calculate the required sight distance on each approach.
9. Results of the vehicle speed counts for the peak period and off-peak period are contained in the table below. The changes in 85 percentile speeds over the peak and off-peak periods have also been recorded in table form to show the change in speeds throughout the day.

Location	Dyers Pass North		Dyers Pass South		Hackthorne West		Hackthorne East	
Time Block	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
Max Speed	61	58	58	64	60	60	51	48
Min Speed	20	24	14	14	24	13	21	25
Average Speed	44.5	43.2	41.4	43.7	43.6	45.8	35.3	37.3
85th Percentile	50	49	49	51	50	53	44	45
Sample Size	315	151	81	107	153	95	81	41

Results of Speed Survey on Dyers Pass and Hackthorne Roads

10. From the table above it can be seen that the difference between 85th percentile speeds during the peak and off-peak conditions are generally within 2 km per hour of each other, and that the maximum speeds are generally within 3 km per hour of each other. From these results it can be concluded that the road and intersection geometry are governing the speeds of vehicles.

Sight Distances

11. Available sight distances were evaluated at the following locations:

Hackthorne Road east and west approaches to Dyers Pass Road from 3 metres behind the limit lines. Hackthorne Road at property no's 108 (the kindergarten right-of-way) and 113A vehicle entrance.

Dyers Pass Road/Hackthorne Road Intersection

12. Using Austroads Part 5: Guide to Traffic Engineering Practice - Intersections at Grade, the Safe Intersection Sight Distance (S.I.S.D.) from Table 5.3 for 50 km per hour is 80 metres and the Entering Sight Distance (E.S.D.) is 125 metres. This is based on a reaction time of 1.5 seconds, which is appropriate given the locality. The S.I.S.D. is the minimum sight distance requirement for an intersection and the E.S.D. is desirable.
13. Sight distances from the Hackthorne Road (west) approach in both directions along Dyers Pass Road meets the S.I.S.D. requirement of 80 metres. Sight distance to the south up Dyers Pass Road also meets the E.S.D. of 125 metres. Sight distance downhill to the north does not meet the E.S.D. because of the road geometry.
14. Sight distance along Dyers Pass Road meets the S.I.S.D. requirement north down Dyers Pass Road due to the recent safety improvements, but does not meet the requirement to the south. Sight distance to the south is restricted by parallel-parked vehicles on the side of Dyers Pass Road. This situation is exaggerated (i.e. sight distance is further reduced) when a goods vehicle (van or light commercial vehicle) or bus is parked. Moving the limit lines forward would not notably increase sight distance due to the intersection being on the inside of a large radius kerb and would be difficult to achieve with Dyers Pass Road being relatively narrow in this location.

No. 108 Hackthorne Road (Kindergarten)

15. This driveway provides access to no.s 106, 108, and 108A and a kindergarten. Sight distance to the west down Hackthorne Road is good and the S.I.S.D. requirements are met. This is enabled by the presence of no-stopping lines. The E.S.D. cannot be met because of the road geometry, as about 100 metres of road can be seen.
16. Sight distance to the east is severely restricted by the presence of parked cars. When no cars are present the S.I.S.D. and E.S.D. are met. However, when cars are parked adjacent to the kerb, sight distance can be reduced to about 20 metres. This is unsafe and consideration should be given to the removal of three carparks by the installation of 20 metres of no stopping lines to the east of the driveway.
17. It needs to be noted that if kindergarten customers/parents are encouraged to use the driveway by improving the sight lines for exiting drivers, the single lane 3.5 metres wide driveway will block up with traffic more frequently at peak times. Residents in properties with access off the driveway advise that the driveway often becomes congested now at drop-off and pick-up times for the kindergarten children. Also, when neighbouring driveways were considered (normally used by an estimated 10 vehicles per day per dwelling) the restriction of the exiting driver's view lines in an easterly direction by parked vehicles is typical for many driveways in the area. If all driveways in this situation were to have sight lines improved to the recommended minimum by the banning of on-street parking, there would be little on-street parking left.

No. 113 Hackthorne Road

18. The driveway to no.s 113, 113A, 113B, 113C, and 113D Hackthorne Road is located about 40 metres east of a medium tight left hand (uphill) bend. There is no on-street parking between the driveway entrance and the bend outside no. 111 there being a no stopping restriction.
19. Sight distance to the west is in the order of 40 metres. Parked vehicles restrict the sight distance from no. 113A to the east towards Dyers Pass Road. Given the location of the driveway to a tight corner with restricted sight distance it would be desirable to provide more sight distance in this easterly direction. Consideration should be given to the removal of these two carparks by the installation of no-stopping lines. The no-stopping restriction would need to extend for 20 metres on the east side of the vehicle entrance to property no. 113A. This would result in the loss of two on-street carparks.
20. When neighbouring driveways were considered (normally used by an estimated 10 vehicles per day per dwelling) the restriction of the exiting driver's view lines in an easterly direction by parked vehicles is typical for many driveways in the area. If all driveways in this situation were to have sight lines improved to the recommended minimum by the banning of on-street parking there would be little on-street parking left.

Local Schools

21. Both the Cashmere Primary School and the Kidsfirst Kindergarten Cashmere were visited and their comments sought. Senior staff from each facility were consulted. Both said that generally the recent works had improved road safety. Detailed comments made by the respective centres are included in Montgomery Watson Harza's report.

Local Residents/Businesses

22. Montgomery Watson Harza made a survey of the residents in Westenra Terrace (full length), 88 to 200 Hackthorne Road, 78 to 172 Dyers Pass Road, and Kiteroa Place (full length) to gain further understanding of the issues, if any. The survey form and results are included in the full report (distributed with the agenda). All operating businesses located on the Dyers Pass/Hackthorne Roads intersection have been canvassed.

Parking

23. On-street parking in the immediate vicinity of the intersection is limited. While the speed surveys were being undertaken the parking availability and demand was noted and can be summarised as follows:
 - (a) Parking demand in the intersection was not noted as being high in spite of the parking demand of the corner shops, and parking duration was short. The carparks between Hackthorne Road and the bus stop were not always full. It should be noted that at the time of the audit one of the four businesses facing the street was being renovated and was not open for business.
 - (b) Dyers Pass Road south generally had carparks available close to the Hackthorne Road intersection. Dyers Pass Road north has no stopping restrictions on both sides of the road from Hackthorne Road to the pedestrian crossing on the bend.
 - (c) There was a high demand for parking at Cashmere Primary School during school start and finish times. For the remainder of the day the turnover was low.
 - (d) Hackthorne Road west was predominately long term parking. There were some spaces available that were used for medium term parking with a high parking demand round the kindergarten at drop-off and pick-up times.
24. It needs to be noted there is normally a strong parking demand at peak times in two of the areas where no-stopping restrictions are being considered; in front of the kindergarten, and in front of the shops/businesses (when all are open) on the intersection of Dyers Pass and Hackthorne Roads. Consultation with the affected parties has shown that while all acknowledge the safety benefits, some feel strongly the perceived safety benefits do not justify the removal of on-street parking.

Recent Safety Improvement Works

25. Safety Improvement works were carried out on the Dyers Pass/Hackthorne Roads intersection and in Hackthorne Road.
 - (a) Firstly, in 2001 an island and flush median were installed in Hackthorne Road on its western approach to Dyers Pass Road to reduce corner cutting and the speed of turning traffic as shown on TP117601 attached.
 - (b) Secondly, in early 2004 on Dyers Pass Road north of its intersection with Hackthorne Road the bank and road on the east side were reconstructed as shown on TP142801 attached. This work was carried out to provide adequate sight lines for drivers exiting from the eastern side of Hackthorne Road.
 - (c) Thirdly, in late 2004 on-street parking was removed from the west side of no. 113's vehicle entrance to the then existing no stopping around the inside of the corner outside no. 111 to improve lines of sight for drivers exiting no.s 113, 113A, 113B, 113C, 113D, and 111 Hackthorne Road vehicle entrances .

Crash Data

26. In the last five years (2000 to 2004 inclusive) there have been in the area covered by the audit five non-injury accidents reported on the Dyers Pass/Hackthorne Roads intersection, plus one accident on the bend at no. 111 Hackthorne Road. All occurred before April 2002 as per Land Transport Safety Authority accident report (see attached). These results suggest that the safety measures taken have improved safety at the intersection.

Conclusions

27. Montgomery Watson Harza's report identified three locations where sight distances can be restricted by parked vehicles and were a significant safety concern as noted below. In the past, on-street parking has not been removed because of anticipated objections from the public. The three locations in order of significance are:
- (a) Intersection of Dyers Pass Road with Hackthorne Road. Sight distance from the Hackthorne Road (east) approach is restricted looking south, up Dyers Pass Road. The bus stop location can temporarily worsen the problem at times throughout the day. The worst situation from this approach is for drivers turning right; an estimated 100 vehicles per day turn right. To improve sight lines removal of three standard carparks on the eastern side of Dyers Pass Road between Hackthorne Road and the bus stop should be considered. As the bus only stops normally to let passengers off at this location for approximately thirty seconds, the removal of the bus stop is not justified. It needs to be noted that if this on-street parking is removed it will leave no on-street parking in Hackthorne Road in front of these shops/businesses.
 - (b) The private right of way to no.s 106, 108, Hackthorne Road and the Kidsfirst Cashmere Kindergarten. Sight distance to the east can be severely restricted by parked vehicles. An estimated 60 vehicles per day use this driveway. To provide adequate lines of sight for exiting drivers the installation of 20 metres of no stopping lines to the east of driveway should be considered.
 - (c) At the private right of way to no.s 113, 113A, 113B, 113C and 113D Hackthorne Road. Parked vehicles restrict sight distances in the easterly direction. An estimated 50 vehicles per day use this driveway. To provide adequate lines of sight for exiting drivers the installation of no stopping lines between property no.s 113A and 115 should be considered. This would result in the loss of two on-street carparks.

OPTIONS

28. Options for safety improvements identified by this report include the option of removing on-street parking where it obscures the sight of a significant number of drivers turning into straight through traffic streams, or doing nothing (maintain the status quo) for each location.
29. These options are fully assessed in Section 3 of the consultant's report.

PREFERRED OPTIONS

30. The preferred options are to: -
- (a) Remove the on-street parking on the east side of Dyers Pass Road to the south of the Hackthorne Road in front of the shops.
 - (b) Do nothing at the private right of ways to no.s 106/108 and 113a-e Hackthorne Road.

STAFF RECOMMENDATIONS

It is recommended that the Community Board receive the information and approve that the stopping of vehicles be prohibited on the eastern side of Dyers Pass Road commencing at its intersection with Hackthorne Road and extending in a southerly direction for a distance of 26 metres.

CHAIRPERSON'S RECOMMENDATION

Due to the complexity of this issue and there being no recorded accidents since the most recent changes to the intersection, I recommend that the situation be monitored, with a view to being reviewed in three months' time.