Limitations

The traffic speed data collections were only done for one hour on four occasions which may not have been representative of all vehicles using the streets, and the traffic congestion on one of those collections decreased the speeds in which the cars could physically go. A very low response rate with the surveys also potentially limited how applicable the opinions could be to the whole community. This also prevented us from asking the residents how they felt about the different speed reduction measures in a focus group; instead having to rely on the findings of past studies and literature on the topic.

Future research

Future research could try survey all the residents and collect more extensive speed data to accurately gauge whether a speed reduction is wanted and needed.

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The 2010 and 2011 Canterbury Earthquakes caused widespread damage throughout the Canterbury region affecting in many cases the roading network. Main Road is the main arterial route and thoroughfare connecting Christchurch with Redcliffs and Sumner. In wake of the earthquakes, Main Road has been subject to a number of temporary road closures due to ongoing repairs. As a result of these road closures, full traffic diversions were set up through the residential streets of Celia St and Beachville Road, (Figure 1). This saw a substantial increase in traffic along the quiet residential roads. Approximately 12,000 cars per day were diverted from Main Road along Celia St and Beachville Road that had become accustomed to an average of a few hundred cars normally.

The diversions had a temporary speed limit of 30 km/h. During this period of time a number of residents suggested that the 30km/h speed limit should become
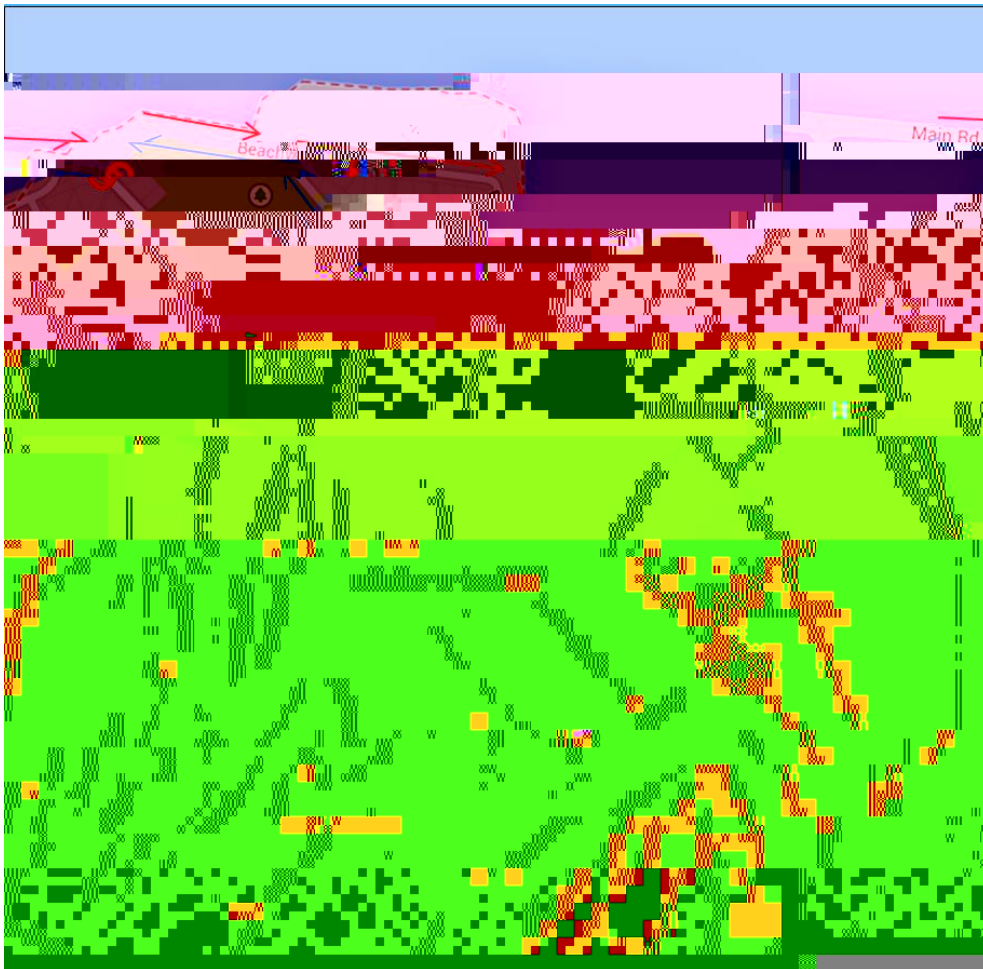

Figure 1: Main Road diversion

A completely opposite approach to road integration, which has been employed in Sweden, is the principle of road separation. Road separation is where pedestrians and cyclists are completely separate from motorists, most often achieved through erecting some form of barrier, such as a small concrete wall or metal guard rail. This increases

The group used a systematic approach to identify the methods which would be of most benefit to achieve our aims. From this, we analysed our objectives and came up with methods to relate and address each of them. This consisted of a mix of primary and secondary data sourced from our own and previous research. Our objectives included addressing whether or not people are speeding, if speed is an issue to the locals and the most effective methods of reducing speeds. It was important that the methodologies that we chose provided us with appropriate research to fulfil the rest of our project.

The group initially focused on secondary data sources. These provided us with essential background information for the project and were primarily sourced during assignment one. This secondary data enabled us to address the objective of how reducing speeds may best be achieved. Previous studies from local and international sources were analysed and compared. Local data sets were of particular significance as they had much more importance to our project. Data sets obtained from the Christchurch City Council reviewed the effectiveness of traffic calming measures, the connection between road widths and speeding and also the link between speed and pedestrian fatalities during a collis ftraf spsotalllc 5.99 613(a)4(p)lsot86(t)-2(h)4(( )-d)4(5.99 613(a)4(p)l)3(so02(t)-2(86(t)-2

high quality of data. Due to the large increase of traffic volumes during the diversion, the group also recognised the importance of obtaining data both while this was and was not in place. Also, because the speed limit was temporarily reduced during the diversion to 30km/h, it presented the opportunity for an observational analysis to whether or not drivers pay attention to the speed limit signs.

The quantitative data we obtained during the traffic speed recording sessions was processed and analysed using Excel software. We were able to gain mean traffic speeds and also produce statistical graphs which presented the data in a way which was appropriate for further analysis.

Unlike quantitative research, qualitative research provides the means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell, 2008). The majority of quantitative data is text based and this text has been described by Schutt (2014) as a way to get behind the numbers that are recorded in quantitative analysis. A semi-structured structured questionnaire was developed to address the objective of whether or not speed was an issue to the local residents of Celia Street and Beachville Road. This semi-structure meant that 6(i)3(s)-44T6d r5euomiroiss Bf a

or 40-44 ranges the minimum being 31km/h, and the average being 44.1km/h. However, 21% of vehicles exceeded the 50km/h limit with some going excessively fast down the

concern for locals. However, those who were travelling at excessively high speeds represent a slim majority of drivers who will always exceed the speed limit no matter the systems in place to reduce speed, and hence pose a risk. Often it was also found that some who were speeding were trades vehicles, who are assumed to not live in the area and are just passing through. The opinion that those who speed are non-residents, and hence do not care for the safety and wellbeing of the area and its people, was suggested by one of the residents as a concern in their survey.

We identified three main limitations to the speed data. The volume of vehicles during the diversion made it impossible to see whether people would adhere to the 30km/h speed as they could not physically travel freely. The speed data was also only collected over one hour on one day which may not be an accurate representation of what all vehicles travel down the street. Finally there were some technical limitations with the speed gun.

vehicle was out of range.

Survey

The survey was used to gauge the opinion of residents on reducing the speed limit and how it would possibly affect them. The full survey as given to the residents can be found in Appendix 1. The surveys were distributed by going door to door and asking the residents to fill out the survey and return it to the address of our community contact on Celia Street. If no one was home or at least did not answer the door the survey was left in their letter box with the instructions to drop it off at the Celia Street address. Using this method, of the 154 surveys that were handed out 26 were returned 15 from Beachville road and 11 from Celia Street. One survey had to be excluded from analysis as no questions had been filled in and in large lettering across the page

The first question asked as to how many people who lived in the household were in certain age ranges. The results are plotted on the column graph in Figure 7. This question revealed that the majority of those who answered our survey were in the age range of 40-64 closely followed by the 65+ age range. This was planned to examine whether the age of the people in the dwelling would affect any of the following questions

asked about the speed limit or the safety of the street. However, in general it was the older age ranges that actually responded to our survey.

Streets' opinion on a permanent speed reduction

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Many different reasons were given as to why residents held the opinion they did about reducing the speed limit. Some of the reasons in favour of reducing the speed limit were that:

Cars are travelling too fast down the street

It is not a main arterial rou

There are young children who live in the area and so would make it safer for them

Children also play in Redcliff park and on the esplanade so would make it safer

Would reduce the vibrations caused by trucks and other heavy vehicles

The layout of Celia with chicanes and the narrow road makes it unsuitable for the current speed limit.

High density of walkers

Sunday sightseers unfamiliar with area and not focused which poses risks

Chicanes on Celia Street make it into a Slalom course

Reasons against the speed reduction were:

It is too fast for trucks and heavy vehicles

The chicanes in place on Celia are sufficient at dropping speeds

Inability to enforce new slower speed

Not affected due to long driveways

People are careful enough

30km/h too slow

50km/h is safe enough

Not many cars travel down streets so safe enough

No reason why the streets should differ from the rest of New Zealand

Slowing down would make it more dangerous as frustrated drivers would accelerate to get past slower drivers

There will always be someone who will go excessively over the speed limit, the limit would not help

The   responses to whether they favoured a possible reduction in the speed limit were mixed with reasonable explanations why they were in favour or against the speed reduction. While all of the responses were taken into consideration some responses were seen as more valid than others. While the number residents in favour and opposed to a permanent speed reduction can be a useful indicator as to whether changes should be made, each of the reasons need to be evaluated on their legitimacy and practicality. For example a reason against a speed reduction was that 30km/h would be too slow. However, the length of Beachville Road is approximately 1000m with Celia Street being about 500m, meaning that the time lost travelling at 30km/h versus 50km/h would be negligible. Some Celia Street residents also thought that the chicanes were sufficient at reducing speeds, while others thought they were a nightmare for parking and encouraging people to speed through them like an obstacle course.

Question 3e and F

This theme was followed up with question 6 asking whether a reduced speed limit would change the way they used the street. The results are shown in Figure 10. 70% reported that it would not change how they used the street with only 15% saying it would and the other 15% not responding, however, many said that they would feel safer and it would be a more pleasant and comfortable environment.

Figure 10: Speed reduction changing usage of street

These results found that residents use the streets in many ways and show that they expect to share the streets with drivers. However when asked if this usage would change if the speed was reduced to 30km/h the majority said that it would not alter how they use the street. This highlights that although reducing the speed would not change their usage of the street it would make what they currently use it for more safe and enjoyable.

Question 4 & 5 asked at what age residents thought it was safe for children to either play on walk unaccompanied on the streets at 50km/h and at 30km/h. A total of 7 residents responded down Celia Street as to what age they thought it would be safe to walk unaccompanied and 5 responded to the question about playing on the street. Meanwhile

Figure 11: Reduced speed safer for children

Reference List

Aliaga & Gunderson, (2010). *Introduction to Quantitative Research.*

Residential speed limit survey