



CREATING PLAY STREETS IN RICCARTON

Finley Bankier
Sophie Kerr
Indigo Little
Kellyanne Urquhart
Rosemary Yorke



Bankier F., Kerr S., Little I., Urquhart K., and Yorke R., 2024, Creating play streets in Riccarton. Report for Christchurch City Council produced as part of the GEOG309 Research for Resilient Environments and Communities course, University of Canterbury, 2024.

Table of Contents

Executive Summary	4
1. Introduction	5
2. Aim	6
3. Context	6
3.1 Play in New Zealand	6
3.2 Play Streets	7
3.3 Greenspaces	8
3.4 Community Diversity	8
3.5 Safety	9
4. Methods	9
4.1 Research Design / Survey Creation	9
4.2 Data Collection	10
4.3 Data Analysis	10
5. Results	10
6. Discussion	13
6.1 Key Findings	13
6.2 Interpretations	13
6.2.1 Age	13
6.2.2 Play spaces	14
6.2.3 Street Activities	14
6.2.4 Safety	14
6.2.5 Community initiatives	15
6.2.6 Traffic	15
6.3 Implications	15
6.4 Our Recommendations	16
6.5 Strengths & Limitations	18
7. Future Research	18
8. Conclusion	19
9. Acknowledgements	20
10. References	21

11. Appendices.....	25
---------------------	----

Executive Summary

- New Zealand is experiencing a decline in children's play, despite its crucial role in behavioural, physical and cognitive development. Safety concerns, a lack of public play spaces, and increased urbanisation are all contributing factors.
- The purpose of this project is to understand the key factors affecting children's play in Riccarton and to provide the Christchurch City Council (CCC) with recommendations of where a play street could best be implemented.
- Our research question is “What is limiting children's unstructured outdoor play in Riccarton and how can this be improved?”.
- Literature reviews were conducted to extract existing information regarding the importance of play and its relevance in New Zealand, safety concerns, and the effectiveness of streets and greenspaces as play spaces.
- Results were gathered by conducting a mixed-method survey using Qualtrics. Subsequently, we found road safety to be the biggest concern in addition to community safety such as crime and ‘stranger’ which aligned with our research findings. Community initiatives such as play streets were identified as the best option to improve levels of play in Riccarton.
- A limitation of our project was the distribution of our survey which led to a small sample size. This resulted in the findings failing to accurately represent the population.
- Further research should seek to consult with residents of the Riccarton location of choice on the implementation of a play street. Traffic calming measures such as lower speed limits and speed bumps should be considered to promote safer streets for play.

1. Introduction

Play is the way children interact with the world through physical activity which promotes creativity, imagination, cognitive development and independence (Blahey, 2021).

Unstructured play involves children having the freedom to navigate their own play, while structured play is when there are directions and rules given by parents on what they can do such as board games, puzzles, and team sports (Hargraves, 2019).

Considering this, it is essential communities can facilitate safe and accessible play spaces to allow children to grow and thrive in their neighbourhoods. With this, it is of interest to the CCC to determine factors that are limiting play, and how to improve it. Our brief for this project was to select a suburb in Christchurch, assess the current play situation, investigate the factors limiting play and identify ways to help improve how children play. As a result, we were tasked to provide the CCC with recommendations on how to improve play within an area in Christchurch.

Our community partner, Lou Van Tongeren, suggested Riccarton for this project. Riccarton is currently facing significant population growth and high housing density (Community Support and Partnerships Unit, 2023). Lou indicated that Riccarton play facilities may be overcrowded and unsafe, and in need of change. The Riccarton ward boundary can be seen in Figure 1 which represents a mix of residential, commercial and educational facilities.

The Riccarton Ward population is 24,861 with 11% aged 0-14 years (Community Support and Partnerships Unit, 2023). The ward has four primary schools and 26 greenspaces, of which 14 have playground equipment (Community Support and Partnerships Unit, 2023), which provide spaces for children to play. However, these play spaces are often of poor condition or are inaccessible to children. Councils' ability to create new greenspaces is limited as Riccarton is already developed. It is due to this, that we look to find ways we can improve play without needing to construct anything new.



Figure 1: Map showing the Riccarton Ward boundary

2. Aim

Our project aims to identify the factors that are limiting outdoor play for primary aged children (5-14), within the Riccarton Ward and to develop a recommendation to enhance local streets by addressing these factors. From the research brief, the scope was narrowed, and the following research question was developed: “What is limiting children's unstructured outdoor play in Riccarton and how can this be improved?”. This report aims to address this research question and provide recommendations to the Riccarton community and the CCC.

3. Context

Relevant literature was critically assessed to provide background information and draw on existing insights regarding children’s play. This was split into five themes.

3.1 Play in New Zealand

Play, a simple concept, is significantly important to children's development, improving their cognitive, emotional, and behavioural growth (Blahey, 2021). It is defined as “intrinsically motivated, spontaneous, self-directed, and often requiring limited adult involvement”

(SportNZ, 2022). Play includes various forms such as outdoor, indoor, games with rules, symbolic play (Whitebread et al., 2021).

The importance of play is often overlooked; however, findings indicate the critical need, and immense benefits children gain from playing. Play helps children familiarise themselves with their neighbourhood and aids independence (Aggio et al., 2017).

In New Zealand, play is significant part of both the Ministry of Education and Sport New Zealand (Ministry of Education, 2018; SportNZ, 2022). Te Whariki curriculum describes how children learn through play allowing them to “explore, experiment, discover, and solve problems” (Ministry of Education, 2018). However, SportNZ (2022) finds that play is significantly declining amongst children in New Zealand due “time, space, health and safety, societal changes, technology, and adult awareness”. To address these challenges, SportNZ (2022) continues to develop strategies to promote and enhance play, implementing initiative such as “Play on the Way” and “Play Streets” that are safe, accessible and encourage active play in everyday spaces.

3.2 Play Streets

Play streets are the temporary closure of quiet streets to encourage safe play, often where play may ordinarily be limited. Umstadd Meyer et al., (2019a) followed 16 play streets within the United States, finding that attending a 3 hour play street could aid children in reaching 50% of their recommended daily steps. Another study analysing 19 play streets in Ghent, Belgium found they can decrease sedentary time in children. This study further concluded that play streets may be beneficial to increase physical activity for those with limited access to parks (D’Haese et al., 2015). Furthermore, studies have found parental perceptions of play streets to be positive (Adhikari et al., 2021; Umstadd Meyer et al., 2019b), and children have had similarly favorable reactions, with most expressing a desire to return after participating in a play street (Zieff et al., 2016). These studies demonstrate how play streets create safe environments to promote physical activity in children, especially in areas where play infrastructure may be lacking or inadequate.

3.3 Greenspaces

Greenspaces such as parks and playgrounds are influential to children's cognitive development, offering areas for play, exploration and physical activity (Dadvand et al., 2015). Traditionally, children's play has been centred around greenspaces, which offer great benefits compared to other play environments (Dadvand et al., 2015). However, increasing urbanisation has heightened parental concerns of traffic, safety, and transportation, leading to children's outdoors independence diminishing (Kingham et al., 2007; Tranter and Pawson et al., 2001; Witten et al., 2013). As a result, children are increasingly playing indoors (Witten et al., 2013). This trend is furthered by a lack of safe, clean, and well-maintained greenspaces (Hand et al., 2018). Addressing this issue goes beyond parental control and reflects a broader lack of community resources, a multidimensional problem that heavily influences children's access to outdoor play.

3.4 Community Diversity

Community diversity can significantly influence children's play, as cultural and socio-economic factors shape parental perceptions and opportunities for outdoor play (Foulds, 2022; Hyun et al., 2021; Witten et al., 2013). Play is perceived differently across cultures and communities. For instance, often parents within Asian cultures will prioritise academic success over play, viewing the two as separate activities. This contrasts Western views that integrate play into learning (Foulds, 2022; Hyun et al., 2021), resulting in children from Asian backgrounds experiencing less unstructured playtime, and thereby impacting their social interactions with peers. Additionally, a lack of cultural integration within communities can limit opportunities for play. Parents can be hesitant to allow cross-cultural interactions due to differing norms and concerns about supervision (Holden et al., 2011; Witten et al., 2011). This lack of integration can reduce children's ability to form diverse friendships within their community, further affecting their play experiences (Witten et al., 2013).

Socio-economic status (SES) can also impact children's play. In lower SES areas, financial stress and limited resources can reduce children's opportunities for outdoor play. Parents may lack the time, energy, or safe environments to support play (Aliyas et al., 2024; Foulds, 2022; Witten et al., 2013). As a result, children may spend more time indoors, leading to increased screen time (Witten et al., 2013). Children in lower SES areas may also spend more time inside due to heightened safety concerns (Wilson et al., 2004). Therefore, when considering

the influence of SES on children's play, it is important to recognise that it is a complex and multidimensional concept that needs to be addressed comprehensively.

3.5 Safety

In the present day, urbanisation has led to efficiency and economic prosperity being highly valued, as a result, there are more vehicles on the road, which travel faster and more frequently (Witten et al., 2012). Van Den Dool et al. (2018) says these traffic conditions support the notion that roads are a 'drivers' territory' rather than a play space for children. This has led streets to accommodate for motor vehicles compared to humans. Parents now feel a responsibility to keep their children safe by encouraging them to play privately within the home (Veitch et al., 2006). Carver et al. (2008) found that cautious parenting behaviours regarding road safety were drawn from a combination of both 'perceptions of road safety' and injury/accident rates within the area. Ultimately, children and parents perceive streets to be unsafe if there are large volumes of traffic, high speed limits and reports of accidents in the area (Egan & Pope, 2024).

Visser & Van Aalst (2022) believe play has become more structured and supervised. Indoor and private play has detrimental flow on effects to community cohesion which ties in strongly to safety. Gao et al. (2024) mentions although cities are denser and people are living closer together, communities are much less connected. Many people do not know their neighbours, and therefore will consider people out on their street as 'strangers'. 'Stranger danger' is a perceived risk due to potential assault which is another reason for parents organising supervised and structured play sessions (Gao et al., 2024). Witten et al. (2013) found that parents in lower-income areas were also concerned with 'stranger danger' but additionally feared gangs, drunken behaviour, vandalism and the presence of youth.

4. Methods

4.1 Research Design / Survey Creation

An online survey was developed to gain insight into how children in Riccarton play, and what inhibits their play. This method for data collection was chosen as online surveys which have a wide reach, are efficient, and are low cost and effort to create and administer (Vaske,

2011). The survey was specifically designed for the target participants, parents and/or primary caregivers over the age of 18 and residing in Riccarton. Due to inconsistencies in Riccarton's boundary definitions, we allowed survey participants to self-identify whether they lived in Riccarton.

Mixed-method approaches are highly valuable for data collection, as they quantify participants' concerns while providing deeper insights through qualitative data (Strijker et al., 2020). As such, the survey included a mix of multi-choice and open-ended questions to gain both quantitative and qualitative data. It was designed and administered using the platform Qualtrics. The full survey is shown in Appendix A.

4.2 Data Collection

Following approval from the University of Canterbury's Human Research Ethics Committee (21/08/2024), the survey was distributed online over four weeks. The survey was posted on the 'Riccarton Neighbourhood Updates' community Facebook page and shared with the Riccarton Collective Group, which includes over 30 local community organisations.

4.3 Data Analysis

Quantitative data was collected, collated and analysed in Excel, with results presented in tables and graphs for visualisation. Qualitative data was gathered from open-ended questions and analysed for presence of patterns.

5. Results

The survey collected a total of 21 responses, 11 of which were completed and 9 uncompleted. Results have been drawn from the 11 fully completed responses to ensure consistency and reliability of the results. Results show uneven distribution across the ages and ethnicity of survey respondent's children; however, most were aged 5 – 9 years and of European descent (Table 1). No children of respondents were of Asian or Pacifica descent (Table 1).

Table 1: Age and ethnicity of survey respondent’s children, alongside Riccarton Ward ethnicity distribution.

Ethnicity	Age Range (%)				Total (%)	Riccarton Ward (%)
	0-4	5-9	10-14	15-16		
European	15.79	42.11	21.05	5.26	84.21	57.70
Māori	5.26	5.26	0	0	10.53	7.20
Pacifica	0	0	0	0	0	3.60
Asian	0	0	0	0	0	34.90
MELAA	5.26	0	0	0	5.26	2.80
Other	0	0	0	0	0	1.10
Total	26.31	47.37	21.05	5.26	100	100

Note: Middle Eastern/Latin American/African (MELAA)

All respondents indicated their children play in greenspaces at least monthly, with 72.7% visiting weekly (Figure 2). In contrast, only 63.7% of respondent's children play on streets either weekly or monthly, while the rest (36.3%) never play on streets (Figure 2).

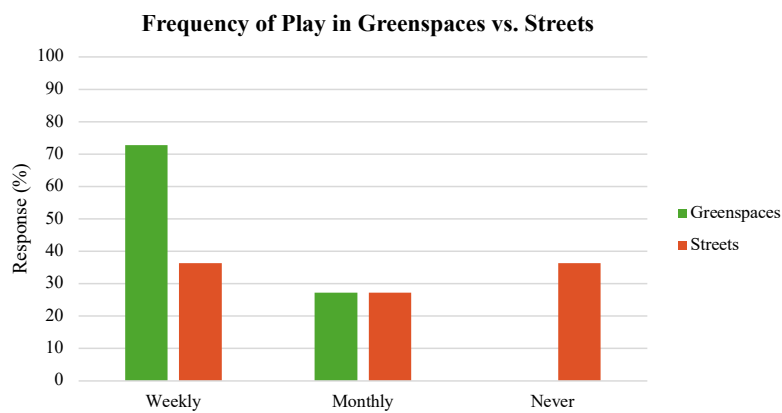


Figure 2: Frequency of play amongst children in Riccarton in greenspaces and streets.

Respondents indicated biking (33.3%), and chalked games (22.2%) were the most common forms of play on streets their children participate in (Figure 3). Ball games (16.7%) and skating/scooter (11.1%) were the less popular, but still participated in.

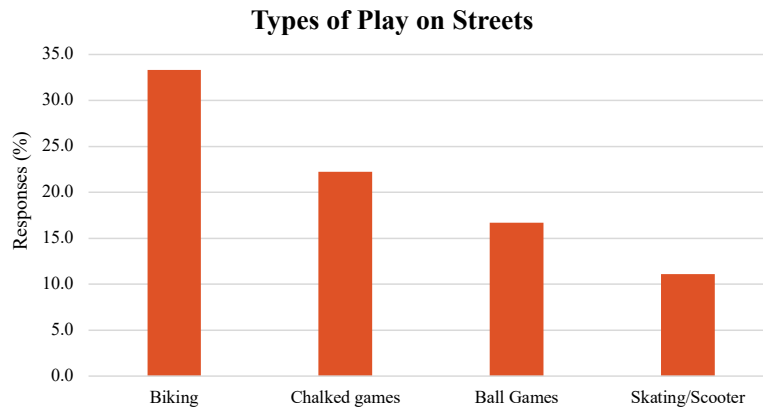


Figure 3: Types of play on streets respondent's children participate in.

Respondents indicated road safety (30.42%) was the most significant factor limiting their children's play, closely followed by concerns of neighbourhood safety (26.09%) (Table 2).

Table 2: Factors limiting the play of respondent's children.

Factors	Response (%)
Road Safety	30.43
Neighbourhood Safety (e.g., crime, 'stranger danger')	26.09
Poorly maintained playgrounds	13.04
Lack of greenspaces and playgrounds	8.70
Other	21.74

37.5% of respondents have indicated they would like to see a community play initiative in their neighbourhood, 25% further indicated like to see improved footpaths and pedestrian crossings to enhance their neighbourhood streets for play (Table 3).

Table 3: Favoured improvements to make streets more play friendly

Improvements	Response (%)
Speed bumps	12.50
Reduced speed limits	20.83
Restricting traffic	4.17
Improved footpaths and pedestrian crossings	25.00
Community play initiatives	37.50

6. Discussion

6.1 Key Findings

The aim of this project was to identify the factors that limit play within Riccarton and then establish ways to help improve this. Survey results support the findings from the literature reviews. Through our results it was found that majority of respondents children were aged between 5-14 years old (63.16%), which aligns with the focus age group within our aim. Next, it was found that children are more likely to play in greenspaces compared to streets, with 36.3% of children never playing on streets. However, for those who do play on streets, biking was the most popular activity (33.3%), followed by chalk games (22.2%). Along with these findings, road safety was the most significant factor limiting children's play (30.42%). 37.5% of respondents favoured community play initiatives to improve children's play in Riccarton.

6.2 Interpretations

6.2.1 Age

With the focus age range group for this project being 5–14-year-olds, Table 1 aligns with this aim showing 63.16% of respondent's children were aged between 5-14 years old. This shows the presence of primary age children within Riccarton, making it a favourable location for implementing play initiatives.

6.2.2 Play spaces

Greenspaces are more favourable play spaces for children compared to streets, demonstrated by our finding that these spaces are being visited more frequently. While wider literature shows the benefit of greenspaces (Dadvand et al., 2015), the limited ability to develop greenspaces in Riccarton (Community Support and Partnerships Unit, 2023) means alternative play opportunities need to be investigated.

6.2.3 Street Activities

The most popular street activity children currently participate in is biking (33.3%), as shown in Figure 3. Chalk and ball games, skating, and scootering are participated in as well, showing that streets are well utilised when played on. Implementing a play street creates a safe environment for children to participate in these activities (Umstatted Meyer et al., 2019b). Such initiatives are especially important in areas with limited quality greenspaces, as play streets help increase children's physical activity when greenspace access is restricted (D'Haese, 2015).

6.2.4 Safety

Road safety has been identified as the most significant barrier to children's play in or around streets, reinforcing the idea that streets are often unsafe for such activities (Egan & Pope, 2024). This aligns with our survey findings, where some children never use streets for play. Addressing road safety as a barrier is essential for improving play spaces, especially when implementing a playstreet initiative.

A lack of fencing around parks, stray dogs, broken glass, a lack of free time, as well as safety dangers associated with intensified housing, were further identified as barriers to children's play in our survey. These qualitative responses reinforce the idea that Riccarton is unsafe for children's play and provides deeper insights into the barriers limiting play.

6.2.5 Community initiatives

The community indicated a want for a community play initiative (Table 3). Understanding what the community desires for their neighbourhood can help aid an involved and cohesive outcome, as their input offers invaluable real-world insights that cannot otherwise easily be replicated (Israel et al., 2005; Minkler, 2005). Thus, utilising these inputs into the planning and decision-making of playstreets will contribute to its success and sustainability.

6.2.6 Traffic

Data from CCC shows weekend traffic volume is less than in the weekday, with 100 less cars travelling on the road (see Appendix C) (CCC, 2024). This means a play street would be more suitable on a weekend day which aligns with the “Play Streets Aotearoa Toolkit” that recommends implementing a community initiative in a “quiet and low risk environment” (SportNZ, 2022).

During the weekday, children are at school, therefore suggesting a focus would be on traffic from 3pm onwards. However, data shows that from 3-5pm, 30% of vehicles are speeding (CCC, 2024). Alternatively, on a weekend day, speed is lowest during the morning hours. Speed is lower between 11am -1pm compared to the afternoon on a weekend day, with 32% of vehicles speeding (CCC, 2024). The distribution of cars speeding on Wharenui Road (a main route through Riccarton) is higher than on Monday, but as there are less vehicles on the road on a weekend day, the total amount of cars speeding is less. These results suggest the safest time to utilise streets in Riccarton is on a Sunday between 11am - 1pm.

6.3 Implications

Safety concerns were identified as the most significant barrier limiting children's play. This aligns with the findings from other literature (Carver et al., 2008; Faulkner et al., 2015; Gao et al., 2024; Solomon-Moore et al., 2018; Visser & Van Aalst, 2022; Weir et al., 2006; Witten et al., 2013). Urbanisation has increased vehicle traffic (Witten et al., 2013). Parents have become increasingly concerned about road safety and traffic conditions thus, restricting their children's independent outdoor play (Carver et al., 2008; Egan & Pope, 2024; Van Den Dool et al., 2017).

Play streets have been found to improve perceived safety as they promote social cohesion and reduce drug activity (Zieff et al., 2016). These spaces limit traffic, addressing parental concerns for road safety and are located near children's homes, requiring minimal supervision accounting for community safety (D'Haese et al., 2015).

Normally play streets are only held for a few hours of the day and on the weekend (SportNZ, 2022). However, it remains critical that safety be improved through other measures outside of these times to ensure neighbourhoods are consistently safer for children. Some of these measures could include reducing speed limits, improving footpaths and pedestrian crossings (Stevens & Salmon, 2014).

Addressing these factors will allow the Riccarton community to create a safe and friendly environment that facilitates safe play for all children, which will in turn improve children's development and overall wellbeing (Blahey, 2021).

The CCC can benefit from the results produced in this project as they give valuable insight into what the community requires, and what the current play situation within Riccarton is. Understanding this will enable the CCC to improve play in Riccarton and implement suggestions in other relevant locations also.

6.4 Our Recommendations

The New Zealand Transport Agency (NZTA, 2021) produced a set of guidelines to facilitate the implementation of a play street (Appendix B). Using these guidelines, our survey and the research results, we recommend implementing a play street on Broadbent Street (Figure 4). This street is recommended as it is located away from busy main roads, it is not a bus route nor emergency vehicle route and it is in a 50km/h zone. It is also a cul-de-sac which provides extra safety through slowed traffic speeds which our research has found may increase social cohesion (Weir et al., 2006). The CCC traffic data results suggest that implementing a play street on a Sunday from 11am to 1pm could be a suitable time as there is less traffic on the roads and less people speeding at this time (CCC, 2024).

Based on the evidence produced through this study, a play street is an effective way to improve play in Riccarton. Research has found that play streets can effectively improve safety in the community by promoting social cohesion (Witten et al. (2013), additionally they are dynamic, bringing play to communities. Furthermore Zieff et al., (2016) found that play

Commented [PE1]: I would also draw this out a bit further as to why you have chosen a play street over utilising greenspaces etc. Reference the work that you have in the section above.

Eg based on the evidence produced in this study, we concluded that implementing a play street would be the most effective way to improve play in Riccarton...

Extending greenspaces is not an option due to x y z... therefore we propose that the best option to improve play in Riccarton is to....

Commented [PE2R1]: It is unclear why you have chosen play streets as the form of improved play when you have also looked at other options e.g. greenspace in your survey results. Integrate why you have chosen playstreets more

streets may be good to implement in urban areas which have limited greenspace. Riccarton has little green space compared to other wards, however extending greenspaces would be expensive and time consuming. Furthermore, this would not address any accessibility issues to play spaces as effectively as play streets might.

Before implementation, it is important to consult residents of the street on their willingness to host a play street or understand if a play street would be beneficial in this area. Survey results may be of interest to the CCC providing them with relevant information regarding barriers limiting play within Riccarton.

Applications for play equipment can be accessed through the 'Summer with your neighbours' fund (CCC, 2024). Road barriers are required to alert drivers of the street closure. Volunteers will be needed for safety purposes, first aid, and supervision of the children (SportNZ, 2022).

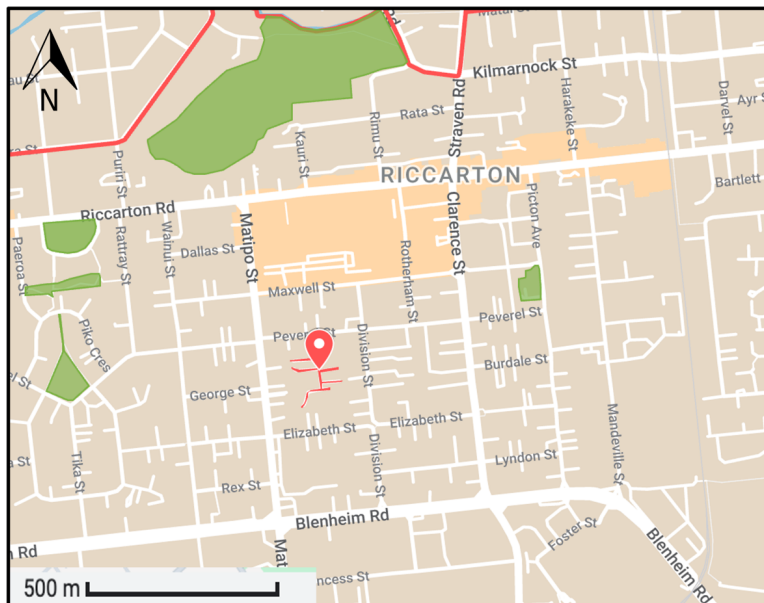


Figure 4: Section of Riccarton, highlighting Broadbent Street

6.5 Strengths & Limitations

The survey provided valuable insight into current perspectives within Riccarton, however a significant limitation stems from the low number of completed responses (11). The results would have been more accurate and representative with a higher participation rate. Although 9 additional respondents started but did not finish, these responses were not included to maintain consistency amongst results. The limited number of responses may be attributed to the survey's distribution being restricted to online and on Facebook, which confined participation to individuals with access to both.

In addition to the small number of survey respondents, their ethnic distribution did not reflect the broader Riccarton Ward. Additionally, it is important to note that the Riccarton Ward population data is outdated, having been collected in 2018. Given Riccarton's high migrant population (Community Support and Partnerships Unit, 2023), demographic shifts are likely, making it challenging to accurately predict current changes.

Furthermore, while the reviewed literature provided insight into play and play streets, much of the data and research was conducted overseas and may potentially be less accurate to New Zealand.

CCC traffic data posed limitations as it was only available for main roads in Riccarton, such as Wharenui Road and Blenheim Road. As play streets are typically implemented on low-traffic streets (Appendix B), gaining data for such streets would have provided more value. In the absence of this data, it was assumed traffic patterns on quieter streets, like Broadbent Street, mirrored those on main roads. However, it is recognised that having traffic data directly from Broadbent Street would've provided more accurate insights into determining the best times to implement a play street.

7. Future Research

Future research will be required to support our recommendation and research. Gauging the interest of residents of Broadbent Street is particularly important to determine interest in hosting a play street for children in the area. Other methods could be used to further results such as focus groups and interviews. Ensuring results reflect the population, including all ages and ethnicities present, should be a priority when using these methods.

Further investigations should go into reducing speeds limits in Riccarton from 50km/h to 30km/h. Across Europe, reducing road speeds to 30km/h have found no negative effects as well as “decreased road injuries, fatalities and crashes” (Yannis & Michelaraki, 2024). Pedestrian crossings and improved pathways may also improve safety (Stevens & Salmon, 2014) and were favoured by survey respondents. As such, implementation of these additions should be further investigated, specifically regarding their success in New Zealand.

Research has found that both greenspaces (Dadvand et al., 2015) and play streets (Umstatt Meyer et al., 2019b) encourage play. While greenspaces were the preferred play space for survey respondents, they are limited in Riccarton. Consequently, this paper investigates implementing a play street. Benefits of implementing a play street next to a greenspace, should be further researched as the combination of both may further increase play amongst children. Implementing community days at greenspaces may also enhance safety and play however this would need to be further researched.

Overall, this project along with our recommendation can be collectively used to inform policy on how to improve play within communities across the country. The guidelines provided by NZ Transport Agency (2021) in conjunction with our findings can be used to inform policymakers of the relevant requirements needed to implement a playstreet, along with providing essential data to improving traffic safety near play spaces. These findings can be integrated into future policy regarding children's play around New Zealand. However, further research will need to be done to assess the play situation in other areas of New Zealand.

8. Conclusion

The aim of this research was to understand how children play within Riccarton and the ways play can be improved. Survey results were consistent with literature, determining road safety as the primary barrier to play in Riccarton. While play in Riccarton is hindered, research found the implementation of a play street could improve it. Research has identified Broadbent Street as a suitable area for the implementation of a play street in Riccarton. Future research should be undertaken, to investigate how reducing traffic speeds within the Riccarton area will further promote safety.

9. Acknowledgements

We would like to acknowledge our community partner, Lou Van Tongeren as the Play Advisor for CCC for guiding us through this project and enlightening us on this issue. As well as our supervisor Phoebe Eggleton for her ongoing support through every aspect of this project. Additionally, we would like to thank both Sam Savage and Tyla Harrison-Hunt for helping distribute the survey to various community groups around Riccarton. Lastly, we would like to thank all survey respondents.

10. References

- Aarts, M. J., Wendel-Vos, W., van Oers, H. A., Van de Goor, I. A., & Schuit, A. J. (2010). Environmental determinants of outdoor play in children: a large-scale cross-sectional study. *American journal of preventive medicine*, 39(3), 212-219. <https://doi.org/10.1016/j.amepre.2010.05.008>
- Adhikhari, D., Henderson, T., Dolce, M., Banks, A., Zaim, H., Onwuka, A., & Jones, N. (2021). An evaluation of PlayStreets in the South Side neighborhood of Columbus, Ohio. *Perspectives in Public Health*, 141(2), 97–101. <https://doi.org/10.1177/1757913921990411>
- Aggio, D., Gardner, B., Roberts, J., Johnstone, J., Stubbs, B., Williams, G., López Sánchez, G. F., & Smith, L. (2017). Correlates of children’s independent outdoor play: Cross-sectional analyses from the Millennium Cohort Study. *Preventive Medicine Reports*, 8, 10–14. <https://doi.org/10.1016/j.pmedr.2017.07.007>
- Aliyas, Z., Collins, P. A., Sylvestre, M.-P., & Frohlich, K. L. (2024). Investigating social inequalities in children’s independent mobility, active transportation and outdoor free play in two Canadian cities. *Preventive Medicine Reports*, 39(2211-3355), 102642–102642. <https://doi.org/10.1016/j.pmedr.2024.102642>
- Blahey, L. (2021, August 4). *The Power of Play: 6 Benefits for Child Development*. [www.epl.ca](https://www.epl.ca/blogs/post/importance-of-play-for-kids/). <https://www.epl.ca/blogs/post/importance-of-play-for-kids/>
- Carver, A., Timperio, A., & Crawford, D. (2008). Playing it safe: The influence of neighbourhood safety on children's physical activity—A review. *Health & place*, 14(2), 217-227. <https://doi.org/10.1016/j.healthplace.2007.06.004>
- Christchurch City Council. (2024). *Summer with your neighbours*.
- Christchurch City Council. (2024). *Traffic count data*.
- Community Support and Partnerships Unit. (2023). *Riccarton Community Profile*. Christchurch City Council. Retrieved from: <https://ccc.govt.nz/assets/Documents/Culture-Community/Stats-and-facts-on-Christchurch/2023-Community-profiles/2023-Community-Profiles-Riccarton-Ward.pdf>
- Dadvand, P., Nieuwenhuijsen, M. J., Esnaola, M., Forn, J., Basagaña, X., Alvarez-Pedrerol, M., ... & Sunyer, J. (2015). Green spaces and cognitive development in primary schoolchildren. *Proceedings of the National Academy of Sciences*, 112(26), 7937-7942.

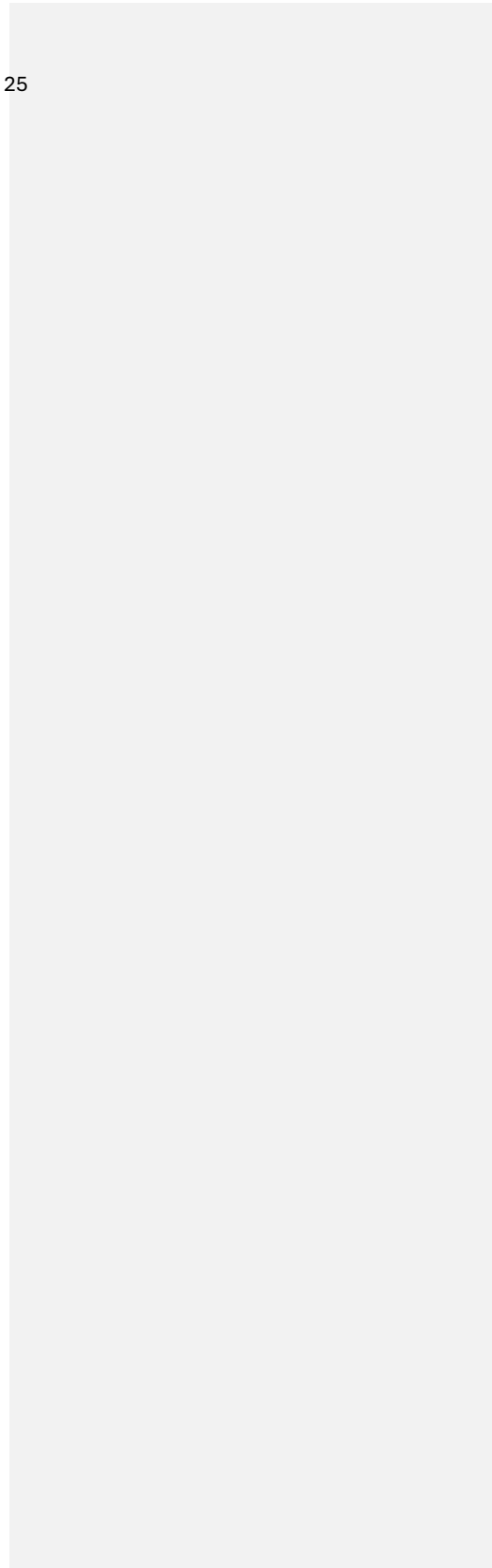
- D'Haese, S., Van Dyck, D., De Bourdeaudhuij, I., Deforche, B., & Cardon, G. (2015). Organizing "Play Streets" during school vacations can increase physical activity decrease sedentary time in children. *International Journal of Behavioral Nutrition and Physical Activity*, 12(1), 14. <https://doi.org/10.1186/s12966-015-0171-y>
- Egan, S., Pope, J. (2024). Streets ahead: Neighborhood safety and active outdoor play in early childhood using a nationally representative sample of 5-year-olds. *Child development*. <https://doi.org/10.1111/cdev.14132>
- Faulkner, G., Mitra, R., Buliung, R., Fusco, C., & Stone, M. (2015). Children's outdoor playtime, physical activity, and parental perceptions of the neighbourhood environment. *International journal of play*, 4(1), 84-97. <https://doi.org/10.1080/21594937.2015.1017303>
- Foulds, K. (2022). Playful perceptions: the role of and barriers to play for parents of young children in diverse global contexts. *International Journal of Play*, 2, 1–18. <https://doi.org/10.1080/21594937.2022.2156040>
- Gao, M., Zhu, X., & Cheng, X. (2024). Safety–Premise for play: Exploring how characteristics of outdoor play spaces in urban residential areas influence children's perceived safety. *Cities*, 152, 105236. <https://doi.org/10.1016/j.cities.2024.105236>
- Hand, K. L., Freeman, C., Seddon, P. J., Recio, M. R., Stein, A., & van Heezik, Y. (2018). Restricted home ranges reduce children's opportunities to connect to nature: Demographic, environmental and parental influences. *Landscape and Urban Planning*, 172, 69-77.
- Hargraves, V. (2019, November 11). *What is play and why is it important for learning?* The Education Hub. <https://theeducationhub.org.nz/what-is-play-and-why-is-it-important-for-learning/>
- Holden, A. (2011). Community cohesion and children's play: a new conceptual framework. *Education 3-13*, 41(3), 346holden–358. <https://doi.org/10.1080/03004279.2011.586950>
- Hyun, S., McWayne, C. M., & Mendez Smith, J. (2021). "I See Why They Play": Chinese immigrant parents and their beliefs about young children's play. *Early Childhood Research Quarterly*, 56(0885-2006), 272–280. <https://doi.org/10.1016/j.ecresq.2021.03.014>
- Israel, B. A., Lantz, P. M., McGranaghan, R. J., Guzman, J. R., Lichtenstein, R., & Rowe, Z. (2005). Documentation and evaluation of CBPR partnerships. *Methods in Community-Based Participatory Research*, 255-277.

- Kingham, S., & Ussher, S. (2007). An assessment of the benefits of the walking school bus in Christchurch, New Zealand. *Transportation Research Part A: Policy and Practice*, 41(6), 502-510.
- Ministry of Education. (2018). Learning through play – What’s it all about? / NZC Online blog / Curriculum resources / Kia ora - NZ Curriculum Online. Tki.org.nz. <https://nzcurriculum.tki.org.nz/Curriculum-resources/NZC-Online-blog/Learning-through-play-What-s-it-all-about>
- Minkler, M. (2005). Community-Based Research Partnerships: Challenges and Opportunities. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 82(2_suppl_2), ii3–ii12. <https://doi.org/10.1093/jurban/jti034>
- Nguyen, P.-Y., Astell-Burt, T., Rahimi-Ardabili, H., & Feng, X. (2021). Green Space Quality and Health: A Systematic Review. *International Journal of Environmental Research and Public Health*, 18(21), 11028. <https://doi.org/10.3390/ijerph182111028>
- NZTA. (2021). *Guidelines for Restricting Traffic for Play Street Events*. Retrieved from <https://www.nzta.govt.nz/assets/resources/play-street-guidelines/Guidelines-for-restricting-traffic-for-Play-Street-events.pdf>
- Solomon-Moore, E., Emm-Collison, L. G., Sebire, S. J., Toumpakari, Z., Thompson, J. L., Lawlor, D. A., & Jago, R. (2018). “In my day...”-Parents’ views on children’s physical activity and screen viewing in relation to their own childhood. *International journal of environmental research and public health*, 15(11), 2547. <https://doi.org/10.3390/ijerph15112547>
- SportNZ. (2022). *Play | Play Development | Sport New Zealand - Ihi Aotearoa*. Sport New Zealand | Ihi Aotearoa. <https://sportnz.org.nz/get-active/ways-to-get-active/play/>
- Stevens, N., & Salmon, P. (2014). Safe places for pedestrians: Using cognitive work analysis to consider the relationships between the engineering and urban design of footpaths. *Accident Analysis & Prevention*, 72, 257-266. <https://doi.org/10.1016/j.aap.2014.07.007>
- Umstatted Meyer, M. R., Bridges Hamilton, C. N., Prochnow, T., McClendon, M. E., Arnold, K. T., Wilkins, E., Benavidez, G., Williams, T. D., Abildso, C. G., & Pollack Porter, K. M. (2019a). Come together, play, be active: Physical activity engagement of school-age children at Play Streets in four diverse rural communities in the U.S. *Preventive Medicine*, 129, 105869. <https://doi.org/10.1016/j.ypmed.2019.105869>

- Umstadd Meyer, M. R., Bridges, C. N., Schmid, T. L., Hecht, A. A., & Pollack Porter, K. M. (2019b). Systematic review of how Play Streets impact opportunities for active play, physical activity, neighborhoods, and communities. *BMC Public Health, 19*(1). <https://doi.org/10.1186/s12889-019-6609-4>
- Van den Dool, D., Tranter, P., & Boss, A. (2017). Road safety policy and practice safe-street neighbourhoods: The role of lower speed limits. *Journal of the Australasian college of Road Safety, 28*(3), 55-63. <https://search.informit.org/doi/10.3316/informit.325510765916216>
- Veitch, J., Bagley, S., Ball, K., & Salmon, J. (2006). Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health & place, 12*(4), 383-393. <https://doi.org/10.1016/j.healthplace.2005.02.009>
- Visser, K., & Van Aalst, I. (2022). Neighbourhood factors in children's outdoor play: A systematic literature review. *Tijdschrift voor economische en sociale geografie, 113*(1), 80-95. <https://doi.org/10.1111/tesg.12505>
- Whitebread, D., Basilio, M., Kupalja, M., & Verma, M. (2012). *A report on the value of children's play with a series of policy recommendations The importance of play.* <https://www.csap.cam.ac.uk/media/uploads/files/1/david-whitebread---importance-of-play-report.pdf>
- Wilson, D. K., Kirtland, K. A., Ainsworth, B. E., & Addy, C. L. (2004). Socioeconomic status and perceptions of access and safety for physical activity. *Annals of Behavioral Medicine, 1*, 20-28. https://doi.org/10.1207/s15324796abm2801_4
- Witten, K., Kearns, R., Carroll, P., Asiasiga, L., & Tava'e, N. (2013). New Zealand parents' understandings of the intergenerational decline in children's independent outdoor play and active travel. *Children's Geographies, 11*(2), 215-229. <https://doi.org/10.1080/14733285.2013.779839>
- Yannis, G., & Michelaraki, E. (2024). Review of City-Wide 30 km/h Speed Limit Benefits in Europe. *Sustainability, 16*(11), 4382. <https://doi.org/10.3390/su16114382>
- Zieff, S. G., Chaudhuri, A., & Musselman, E. (2016). Creating neighborhood recreational space for youth and children in the urban environment: Play(ing in the) Streets in San Francisco. *Children and Youth Services Review, 70*, 95-101. <https://doi.org/10.1016/j.chilyouth.2016.09.014>

11. Appendices

Appendix A.





Information

Kia ora,

We invite you to participate in a research study on play in Riccarton, Christchurch. This study is being conducted by geography students from the University of Canterbury | Te Whare Wānanga o Waitaha. This project is in partnership with Louise Van Tongeren, Council Play Advocate for Christchurch City Council, and is under the supervision of Phoebe Eggleton, a Teaching Assistant within the School of Earth and Environment at the University of Canterbury. The study is being carried out for GEOG309, a course focused on Research for Resilient Environments and Communities.

What is the purpose of this research? This research aims to identify factors limiting children's play to aid in designing play-friendly streets in Riccarton, Christchurch.

Why have you received this invitation? You are invited to participate in this research as a parent/caregiver and valued community member of Riccarton, Christchurch.

What is involved in participating? If you choose to take part in this research, we ask you to answer questions via the online survey following this information page. Questions in this survey are focused on how children located in Riccarton currently play and what, if anything, limits their play. Completing this survey should take approximately 5 minutes.

What happens to the information you provide? All data will be anonymous and confidential. Anonymity ensures protection of your personal information.

Confidentiality ensures your responses to the survey can only be viewed and used by members of the research team. All study data will be stored in password protected files on the University of Canterbury computer network to ensure anonymity and confidentiality is maintained.

How will the results of the study be published? Results will be presented in conferences and meetings to wider professional and academic audiences. They will also be included in a research report which may be made publicly available. You will not be identifiable in any publication unless you consent to this. If you wish, you may request the research results by supplying an email address at the end of the survey. However, in this case, note your email address will be attached to your survey responses.

Queries or concerns? If you have any questions about the research, please contact Indigo Little at ili18@uclive.ac.nz. If you have any concerns about the research, please contact Phoebe Eggleton at phoebe.eggleton@pg.canterbury.ac.nz. If you have a complaint about this research, please contact the Chair of Human Research Ethic Committee at human-ethics@canterbury.ac.nz.

After reading this information sheet and you are happy to proceed, please go to the next page to read and sign the statement of consent before beginning the survey

Statement of Consent

Statement of Consent

I have read the study information and understand what is involved in participating. By completing the survey and submitting my responses, I consent to participate. I recognise my responses will be submitted anonymously, unless I choose to provide my email address in which case my responses will remain confidential.

By clicking the option below, you acknowledge:

- Your participation is voluntary
- You are at least 18 years of age

- You are a parent/caregiver residing in Riccarton, Christchurch
- You are aware that you may terminate your participation at any time for any reason

Yes, I consent to participate

Demographic Information

What is your age group?

- 18-29
 30-39
 40-49
 50-59
 60 and above

How many children (under 16) live in your household?

- 1
 2
 3
 4 or more

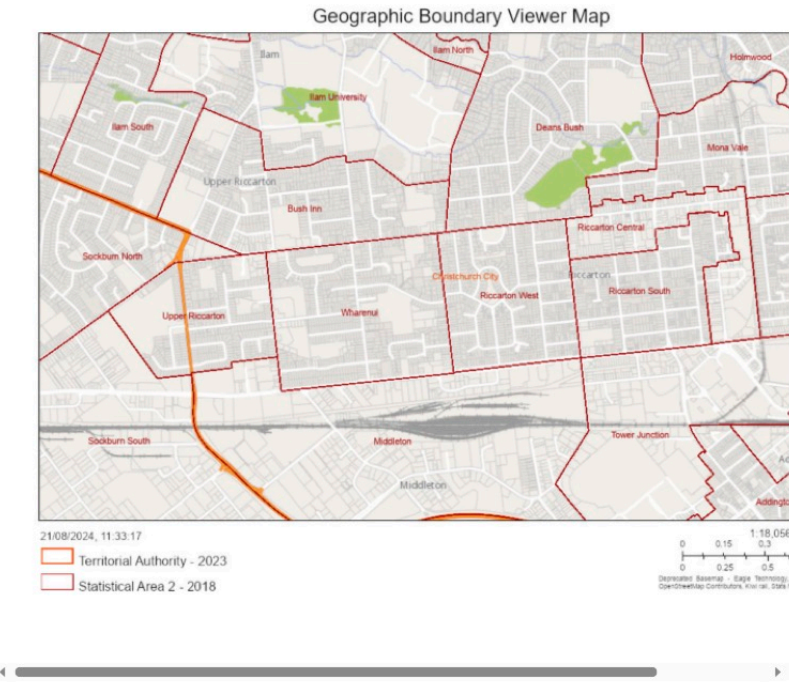
What is the age range of the children in your household? (Select all that apply)

- 0-4
 5-9
 10-14
 15-16

What ethnicity are your children? (Select all that apply)

- Māori
- Pākehā / New Zealand European
- Asian
- Other (Please specify):

Please indicate the approximate location of your residence by clicking on the map:



Current Play Environment

How often do your children play outside on the streets in your neighbourhood? E.g., footpaths, cul-de-sacs.

- Daily
- Weekly
- Monthly
- Never

In what capacity do your children use the street for play? (Select all that apply)

- Biking
- Skating
- Ball games
- Chalked games
- Other (Please specify):

How often do your children play outside in greenspaces and playgrounds in your neighborhood?

- Daily
- Weekly
- Monthly
- Never

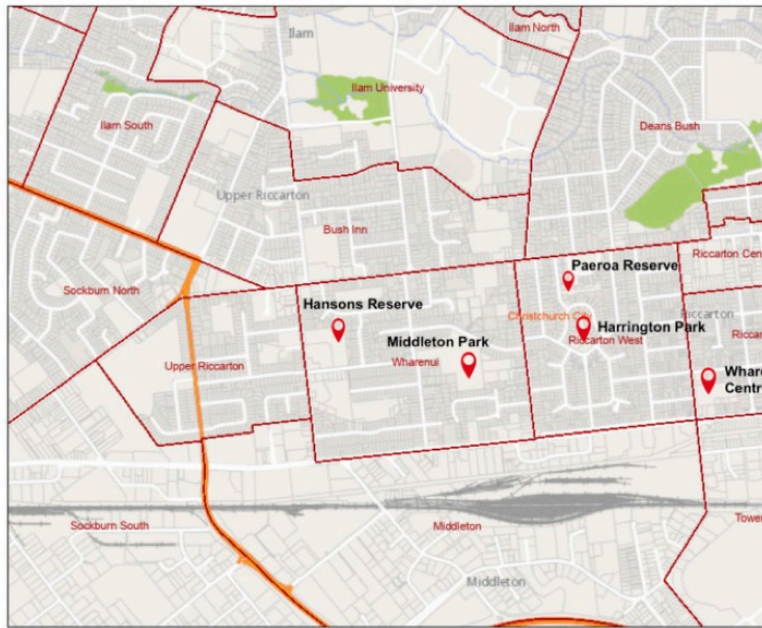
Which of the following types of play spaces are within a 2km radius of your home?

(Select all that apply)

- Parks and Playgrounds
- Green spaces (e.g., small reserve, routes)
- Sports fields
- None of the above

If your children play in public spaces, please indicate where they play most by clicking on the map:

Geographic Boundary Viewer Map



Barriers to Play

What are the main factors that limit children's play in your neighborhood? (Select all that apply)

- Busy roads/traffic
- Lack of green spaces/playgrounds

- Poorly maintained playgrounds
- Safety concerns (e.g., crime, 'stranger danger')
- Other (Please specify):

Are there any specific locations or streets in Riccarton that you feel are particularly unsafe for children to play or travel through?

- Yes (Please specify):
- No

Suggestions for Improvement

What improvements would make your neighborhood more play-friendly for children?
(Select all that apply)

- Speed bumps
- Reduced speed limits
- Restricting through traffic
- Improved footpaths and pedestrian crossings
- Community play initiatives (e.g., street play events)
- Other (Please specify):

Additional Comments

Please share any additional comments or concerns regarding children's play spaces

in Riccarton:

Do you wish to be provided with the research results?

- Yes (If yes, please provide your email address):
- No

Appendix B.

Is the street suitable?

Does the street sound like this?	Further guidance
Light traffic, (particularly at the time of day or week that the event is planned for).	This generally means fewer than an average of 1000 vehicles per day. Or fewer than 1000 vehicles per day on a typical day of the event eg Saturday. Or has low vehicle numbers at the time of day the event is planned eg a Sunday afternoon.
Typically has low traffic speeds.	Typical traffic speeds should be less than 50km/h and the speed limit signposted at 50km/h or less.
Not a key connecting or through route for wider traffic.	The street should be classed as an access road or secondary collector under the One Network Road Classification (or a local street under the One Network Framework).
Not a bus route. Or buses do not use the street on the time and day of the event.	No scheduled public bus services use the road on the day and time of the event.
Not typically used by emergency vehicles.	Not a critical route to a hospital or usual route for Police, fire or emergency.
The streets that directly connect to your street don't have lots of vehicles or high traffic speeds	The streets that directly connect to your street should have a posted speed limit of 50km/hr or less and not be a busy main road or state highway. Or the streets that directly connect to your street are not too busy at the time of the event.

Figure B.1: NZTA (2021) guidelines for a suitable street for a play street.

Is the location suitable?

The event should be easily seen by traffic from a reasonable distance.	Visibility of the event should not be obscured eg by a corner, trees or a hill. The event should be easily seen by traffic, eg from 100m away if the traffic restriction point is on an intersection, or from 50m away if the traffic restriction point is set back from an intersection. Refer to the location set up examples on pages 15 and 16. The event should not be located on an intersection controlled by traffic lights.
The event location should have minimal effect on businesses and should not restrict access to an unreasonable or unmanageable number of residences.	Play Streets work better in residential locations, rather than locations with businesses that might need road access during the event. The event should not be in a location that unduly blocks access to a lot of residential properties.

Figure B.1: NZTA (2021) guidelines for a suitable location for a play street.

Is the event suitable?

Mainly for people that live on the street or close by.	Play Streets events should be aimed at local people who live at or near the event location.
Held during daylight hours.	Play Streets should have good visibility, so are typically during daylight hours.
Held for a limited amount of time.	Play Streets are typically run for two to three hours, although there is no hard and fast rule on this. It is about making sure these events do not unduly inconvenience other people. This might be a one-off event or a regular event. For example once per week or monthly.
Complies with all other council regulations and bylaws.	All other normal regulations and bylaws still need to be complied with such as council bylaws for noise, alcohol and dogs.
Supported by other people living on the street.	Play Streets events need to be supported by the majority of residents at the location to ensure the event can run smoothly and safely.
The event does not involve commercial operations or performances, such as food trucks or bands.	The presence of commercial operators may attract the wider public which would increase foot and vehicle traffic. Commercial operations may also increase risk of damage to the street and increase vehicle movements in and out of the event area especially at set up and pack down times.

Figure B.3: NZTA (2021) guidelines for whether a play street is a suitable event.

Appendix C.

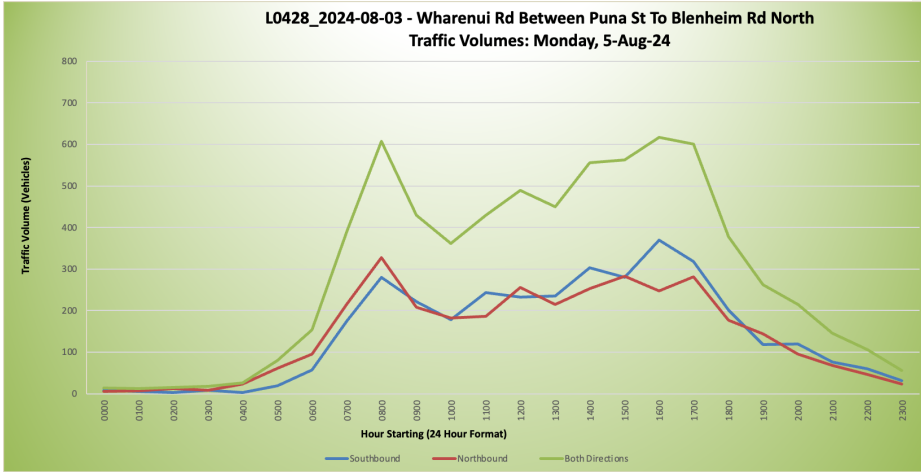


Figure C.1: Traffic Volume on Wharenui Road taken from Christchurch City Council Traffic Count Data on Monday 5th August 2024

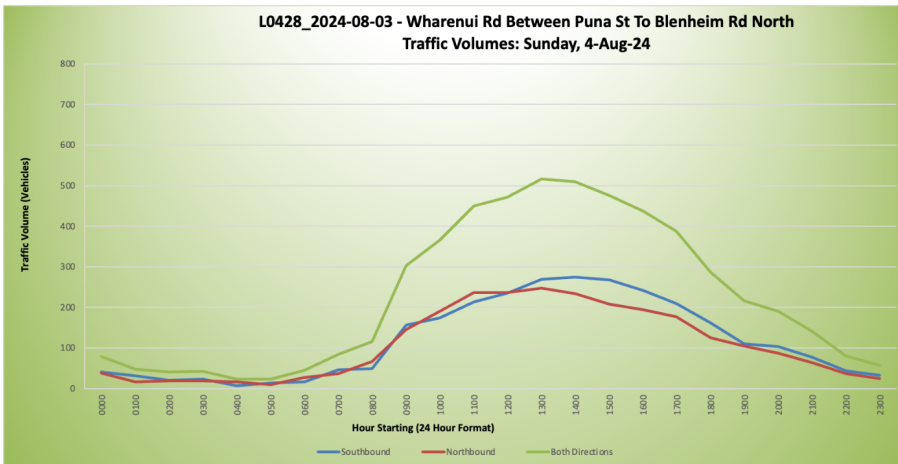


Figure C.2: Traffic Volume on Wharenui Road taken from Christchurch City Council Traffic Count Data on Sunday 4th August 2024

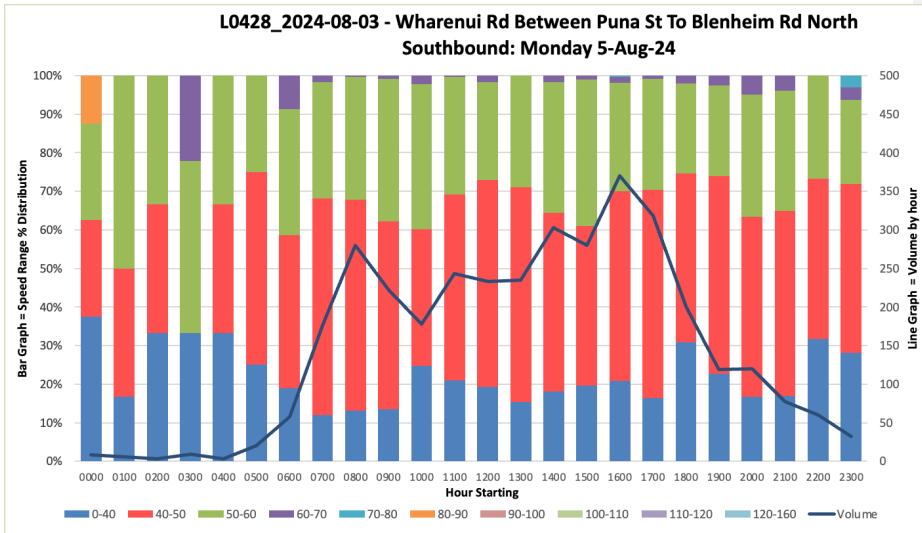


Figure C.3: Traffic Speed on Wharenui Road taken from Christchurch City Council Traffic Count Data on Monday 5th August 2024

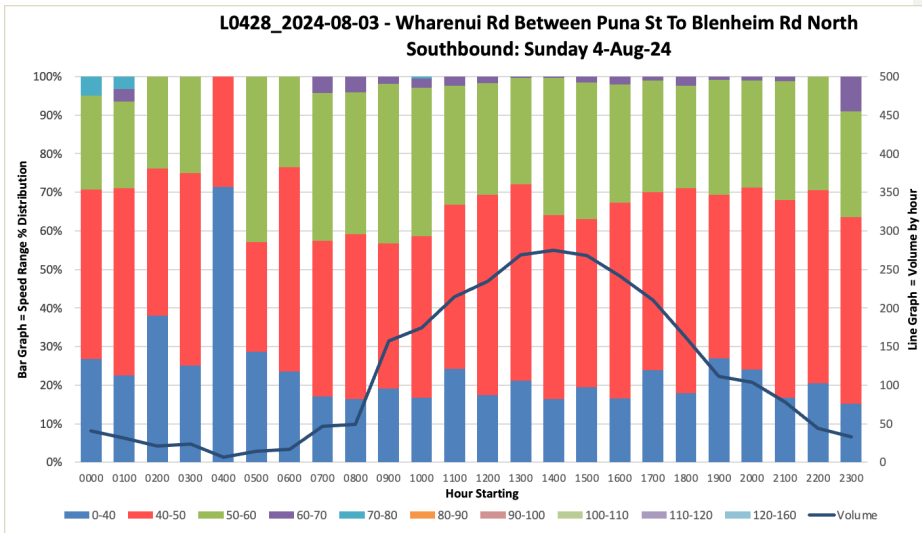


Figure C.4: Traffic Speed on Wharenui Road taken from Christchurch City Council Traffic Count Data on Sunday 4th August 2024

