

MAY 2022

F O L K L

Wellington City Council.

Newtown to City:
Pre-change Analysis.

Absolutely Positively
Wellington City Council

Me Heke Ki Pōneke

FOLKL: PROPRIETARY AND CONFIDENTIAL

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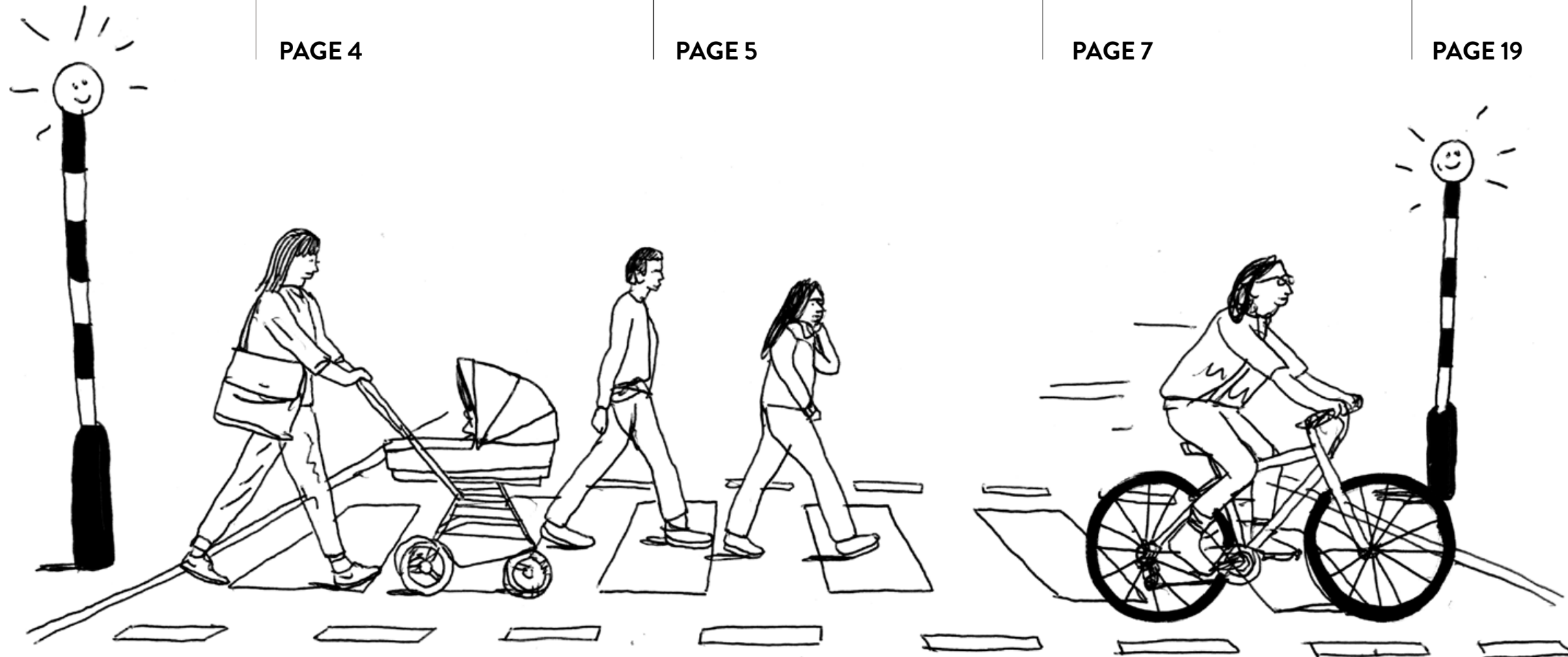
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Project Context.

Wellington City Council are introducing two transitional cycle lanes, Newtown to City, and Botanic Gardens to City in early 2023.

This report covers the pre-change data gathered at the intersection of Riddiford Street/Adelaide Road and John Street in Newtown. This data will be used as the benchmark and compared against post-change data that will be collected in spring 2022.

This pre and post data analysis will allow Wellington City Council to understand how behaviour has been affected by the introduction of the transitional cycle lanes. It will also provide empirical data to justify further development.

Research Objectives.

To provide Wellington City Council with a thorough understanding of how and when this intersection is used between 6:00 AM and 8:00 PM.

This understanding is based on the following metrics:

- Total counts and direction by classification (see Page 4 for detailed information on classification).
- Trajectory and desire line, by classification, of users at the intersection.
- Time distribution of users at the intersection.
- Near-miss data and conflict avoidance (final report only, with benchmark comparison between two phases).

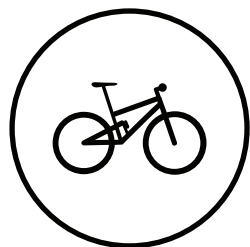
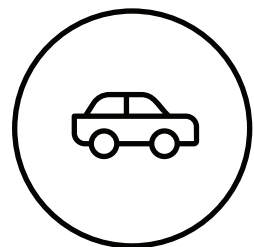


Methodology.

To effectively meet the research objectives, a descriptive use analysis of the area was conducted using FOLKL Vision. For this report, vehicle classifications are broken into three, defined as motor vehicle (car, van, bus, motorcycle, truck and heavy truck) cyclists, and pedestrians.

Mounted cameras, at key intersection points, were used for video observation of vehicle and pedestrian traffic trajectories. A mix of digital processing and manual coding were utilised to analyse the footage.

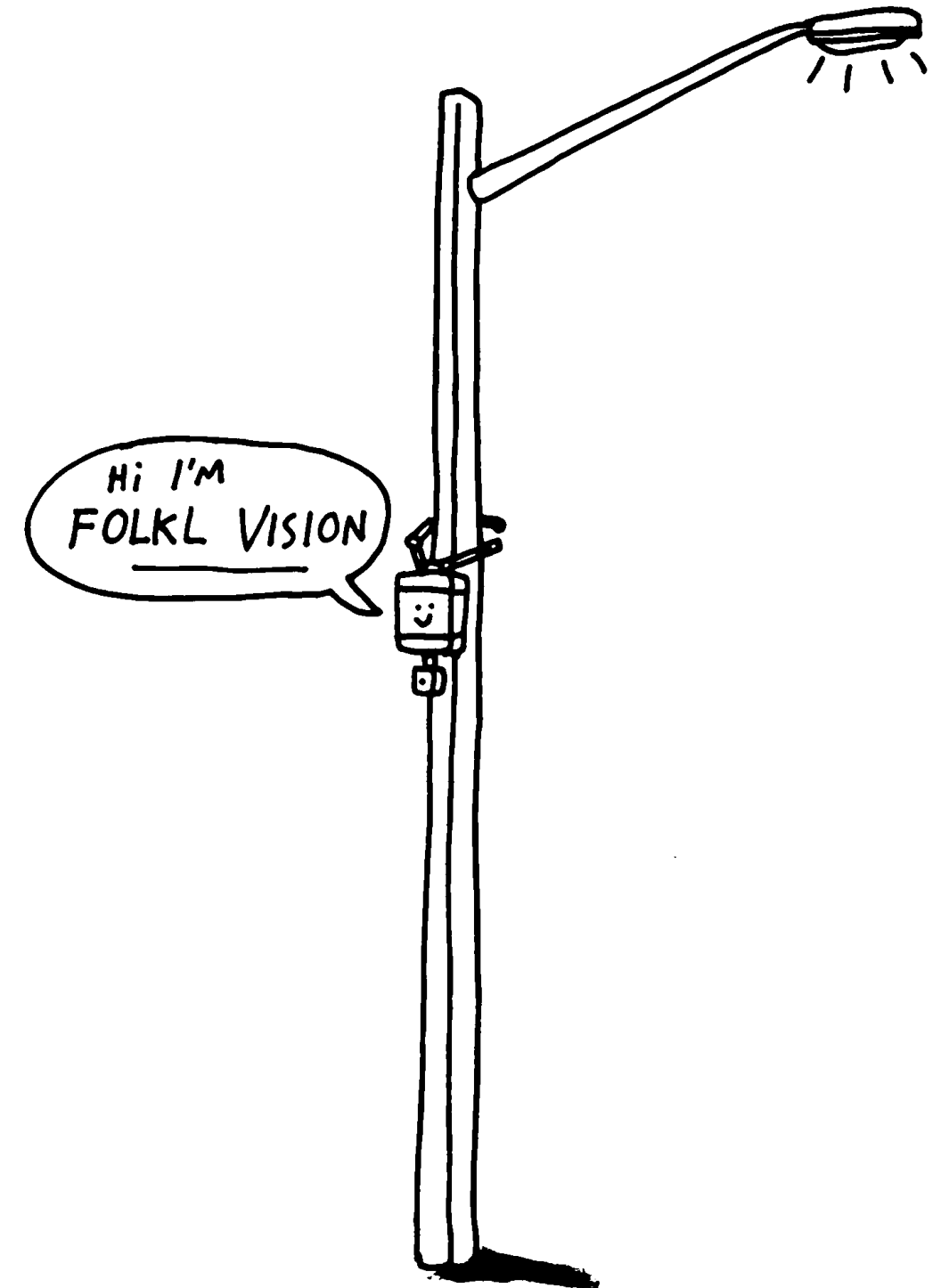
Mounted camera presence and purpose of the project was clearly indicated and explained with adjacent signage which included a link to a description of the specific work being undertaken and its relationship to the wider project.



The schedule of video observation was purposefully designed to capture data across a range of days, peak and off-peak traffic times. Filming took place between 6:00 AM and 8:00 PM, from Tuesday 22 February to Monday 28 February 2022 (7 days). It is important to note that data analysed is a sample and is indicative of usage for the sample period only.



More information on FOLKL Vision can be found on page 21 of this report. All FOLKL research is conducted in accordance with the Research Association New Zealand Code of Practice and is General Data Protection Regulation (GDPR) compliant.





Summary of Findings.

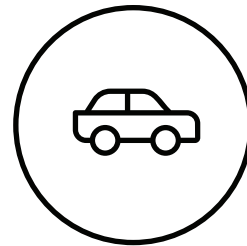


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Summary of Findings.

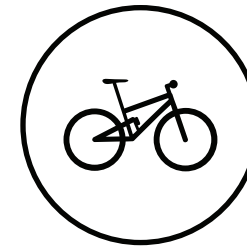
This busy intersection experienced an average hourly usage of 1,730 motor vehicles, 90 cyclists and 307 pedestrians. Motor vehicles and cyclists both followed similar distribution patterns, with obvious AM and PM peaks, while pedestrian-use patterns were more evenly distributed, with a peak usually occurring closer to midday.

The way this intersection is used varies by each of these three classifications:



Motor vehicles

- During the period of filming, motor vehicles accounted for 79.8% of total movements.
- Riddiford Street and Adelaide Road North carried the most traffic.
- Traffic volume and distribution across the weekdays was very consistent.
- Weekdays follow a defined sharp AM peak, and a longer PM peak. Weekend days gradually build to a midday peak.



Cyclists

- During the period of filming, cyclists accounted for 4.2% of total movements.
- Arrival at the intersection was evenly distributed between the four roads. In contrast to motor vehicles, cyclists favoured arriving via Adelaide Road South as opposed to Riddiford Street.
- Cyclist volume was greatest on Monday, and gradually dropped throughout the remainder of the week.



Pedestrians

- During the period of filming, pedestrians accounted for 16.1% of total movements.
- Crossing at John Street and Adelaide Road South accounted for 66% of total crossing.
- Daily volume of pedestrian traffic was consistent except for Sunday where there was a notable decrease.



Findings.



Riddiford Street brings the greatest volume of traffic to the intersection

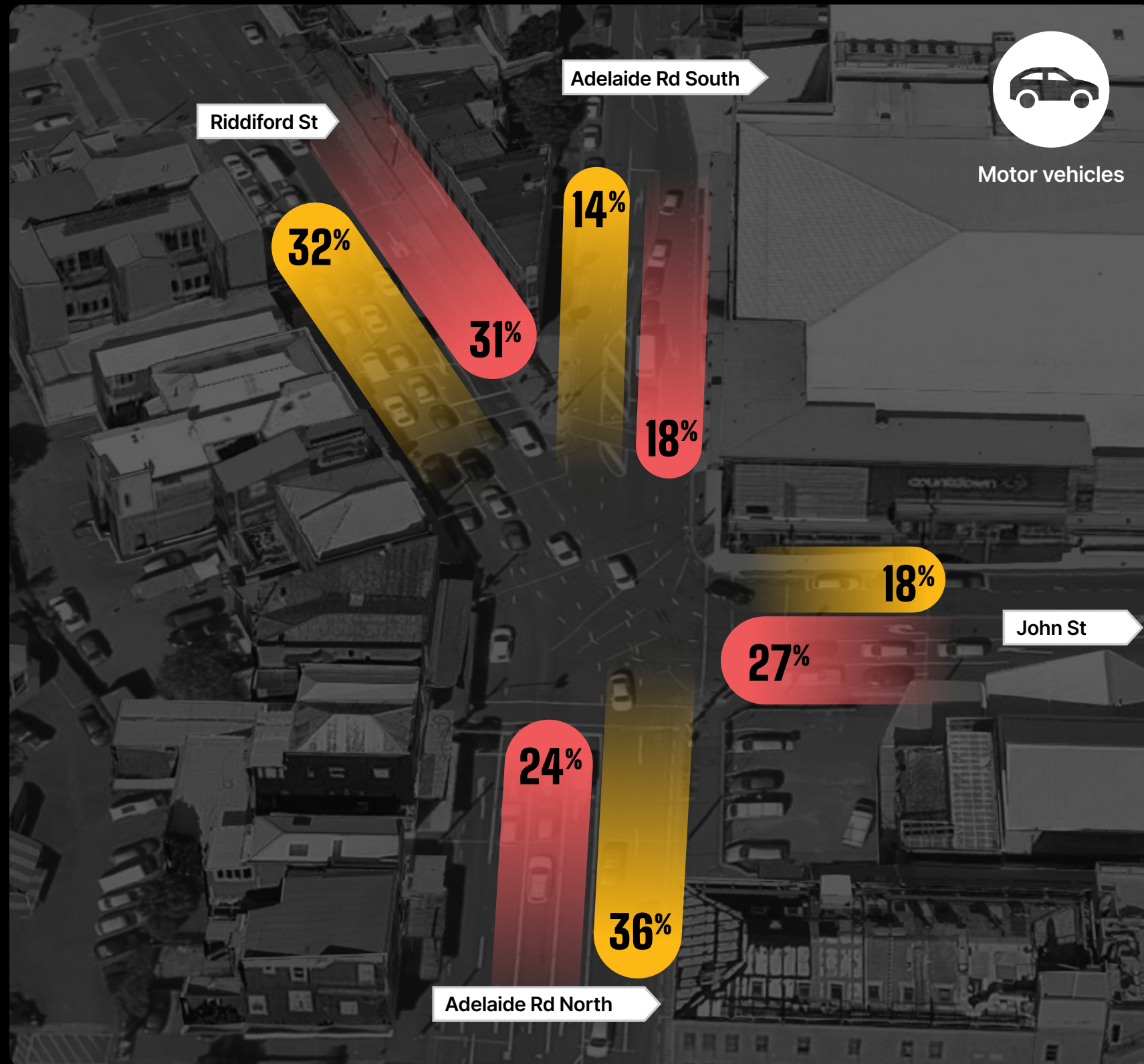
31%

Adelaide Road North takes the greatest volume from the intersection

36%

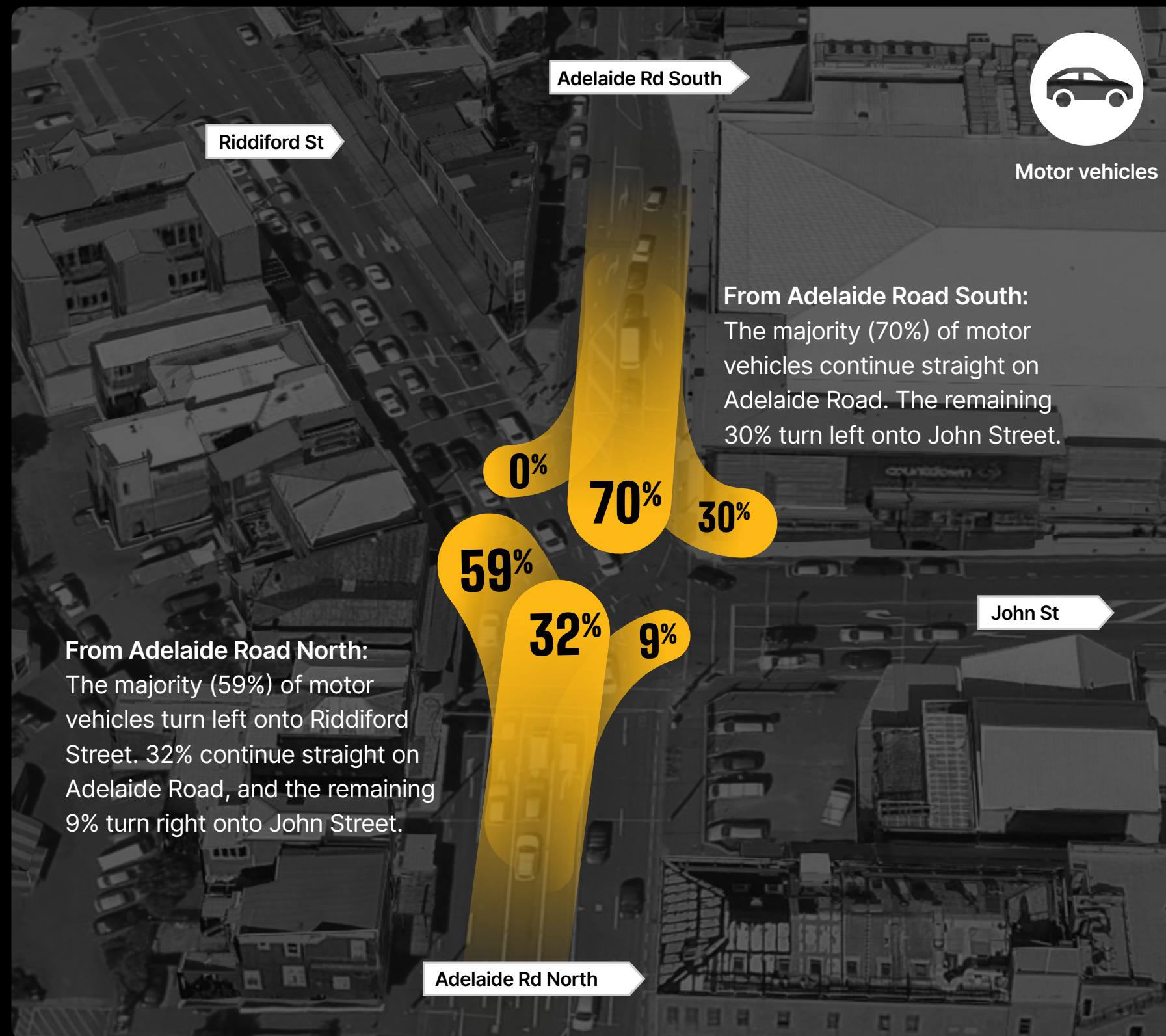
Adelaide Road South brings and takes the lowest volume of traffic.

Key:  Arriving to  Leaving from

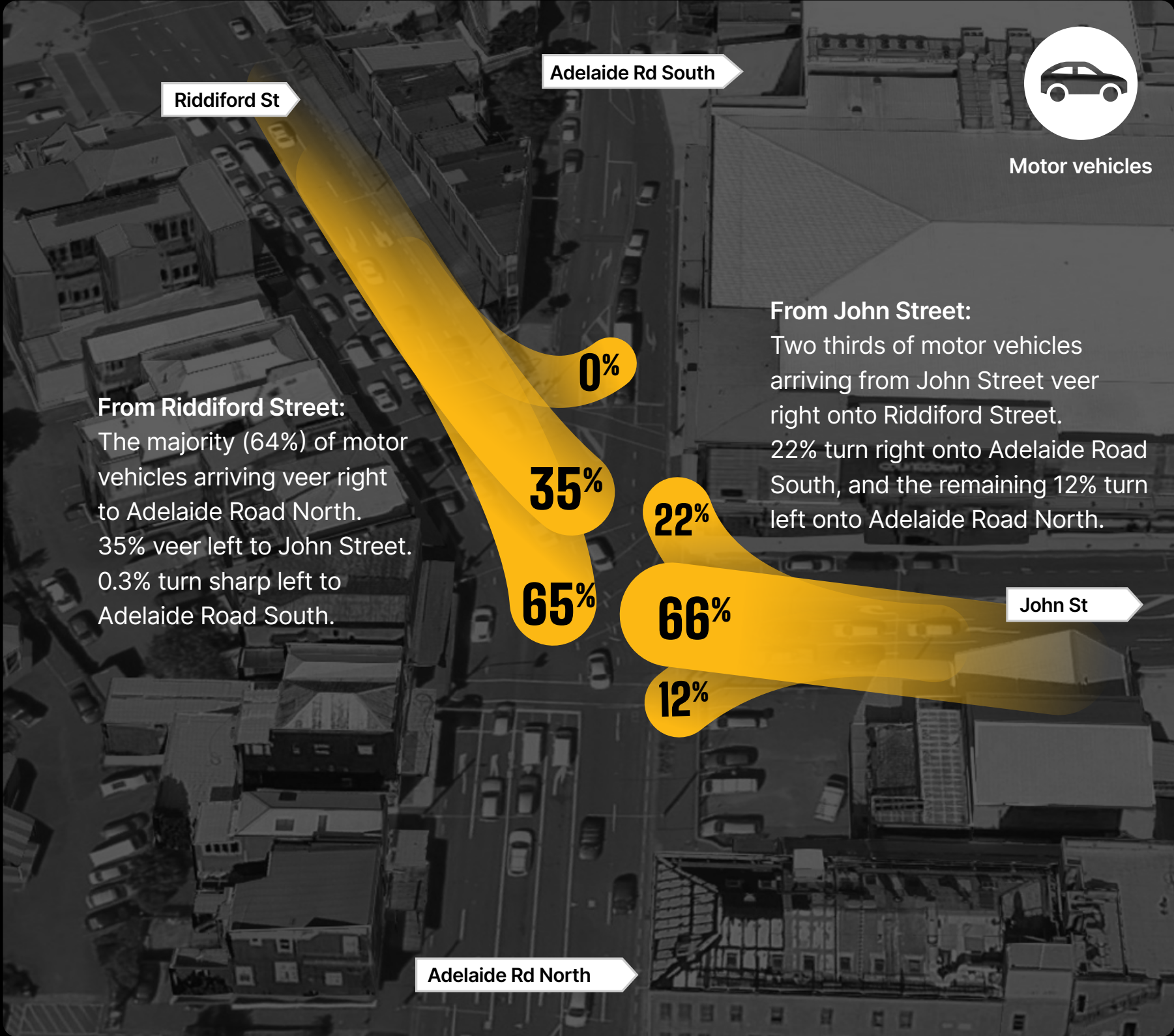


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Intersection behaviour of motor vehicles with an origin of Adelaide Road.



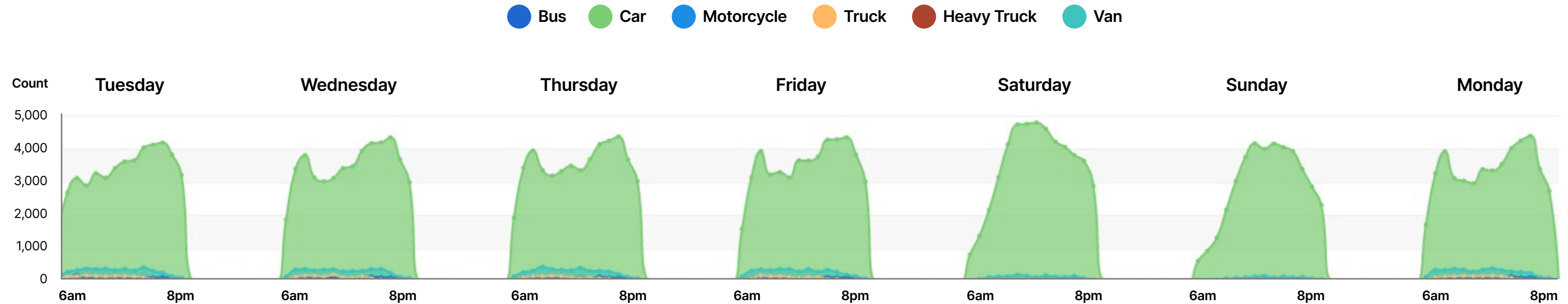
Intersection behaviour of motor vehicles with an origin of Riddiford Street and John Street.



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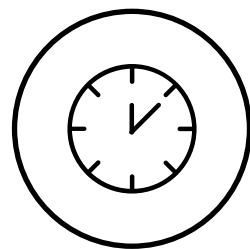
Source: FOLKL Research, Total motor vehicles arriving from: Riddiford Street - 52,934; John Street - 44,583.

Weekday behaviour is consistent between the days, with a sharp increase in traffic volumes, peaking at 8am. A second busy period regularly begins at 1pm, until dropping off from 6pm onwards.



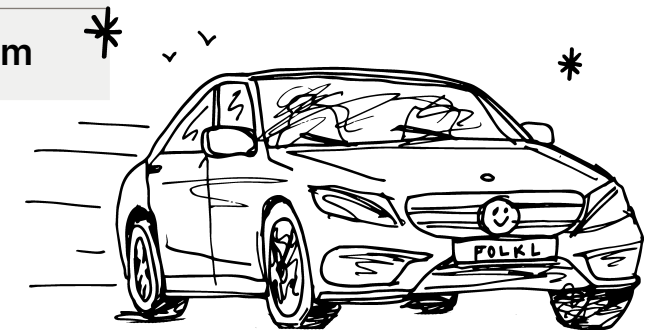
Distribution of motor vehicle movements at intersection between 6:00am and 8:00pm.

Weekend day Weekday



Vehicles Peak Hour

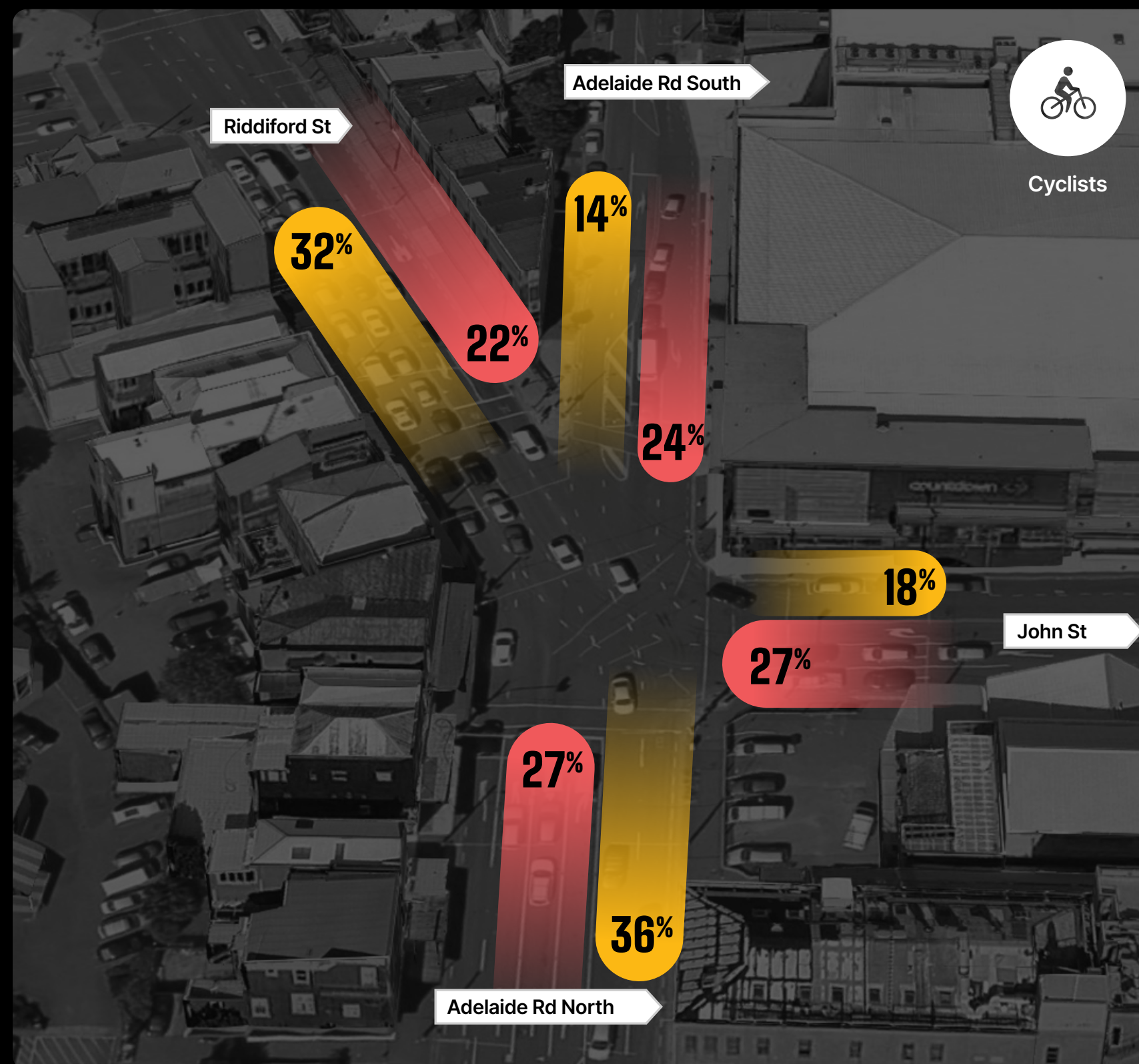
Weekday - am	08:00am - 09:00am
Weekday - pm	04:30pm - 05:30pm
Weekend - am	11:00am - 12:00pm
Weekend - pm	02:30pm - 03:30pm



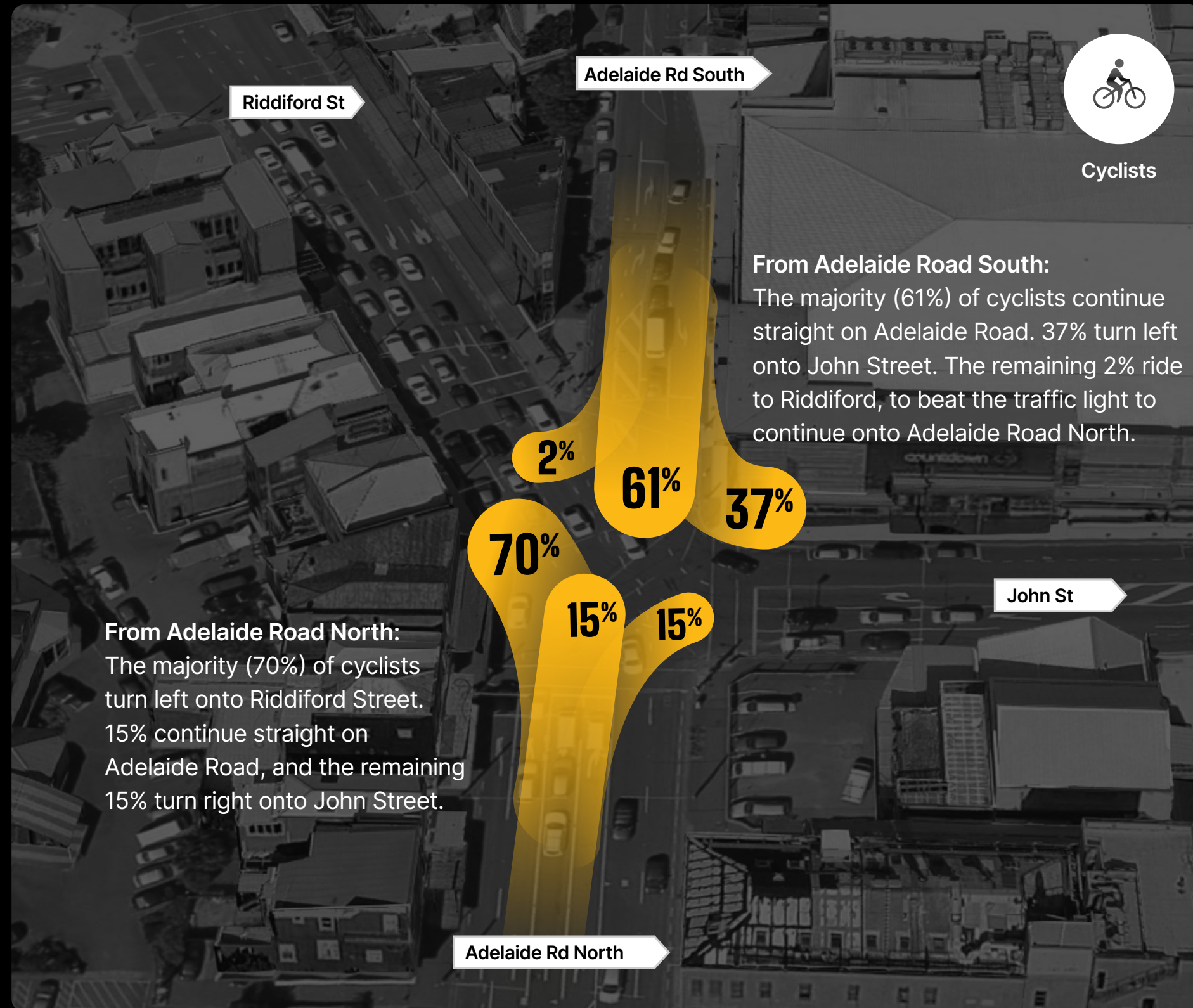
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Overall, the origin and destination of cyclists is similar to that of motor vehicles. It differs when approaching from the south, with cyclists far more likely to arrive via **Adelaide Road South** (24% vs. 18% of motor vehicles) instead of **Riddiford Street** (22% vs. 31% of motor vehicles).

5% Cyclists accounted for 5% of all traffic at this intersection.



Intersection behaviour of cyclists with an origin of Adelaide Road.

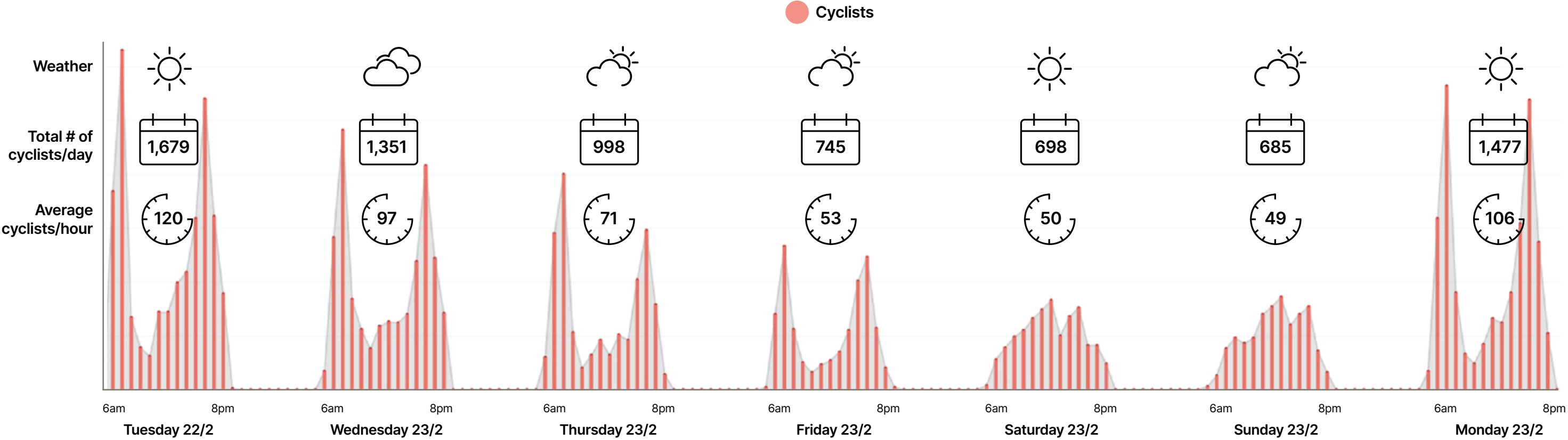


Intersection behaviour of cyclists with an origin of Riddiford Street or John Street.



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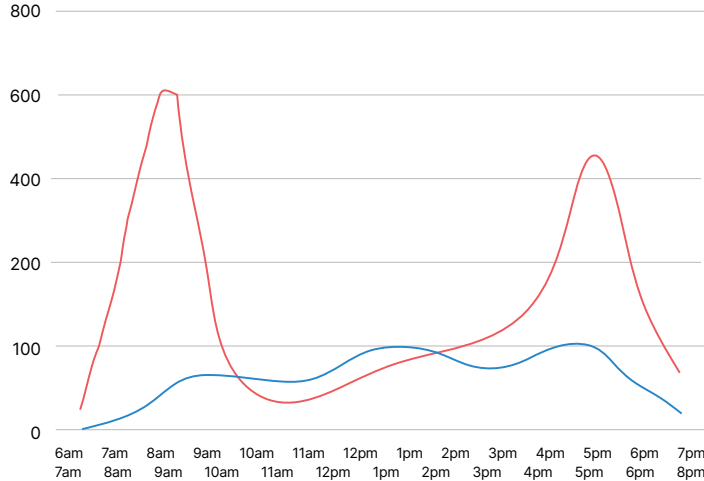
Weekday behaviour is consistent between the days, with obvious peaks coinciding with commuting at 8am and again at 5pm. Cyclist volume gradually decreases as the week progresses. Weekend behaviour sees more cyclists during the middle of the day and less cyclists at the ends of each day.



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Comparison distribution between weekend day and weekday.

Weekend day (blue line) Weekday (red line)



Cyclist Peak Hour

Weekday - am	07:45am - 08:45am
Weekday - pm	05:00pm - 06:00pm
Weekend - am	09:45am - 10:45am
Weekend - pm	01:15pm - 02:15pm



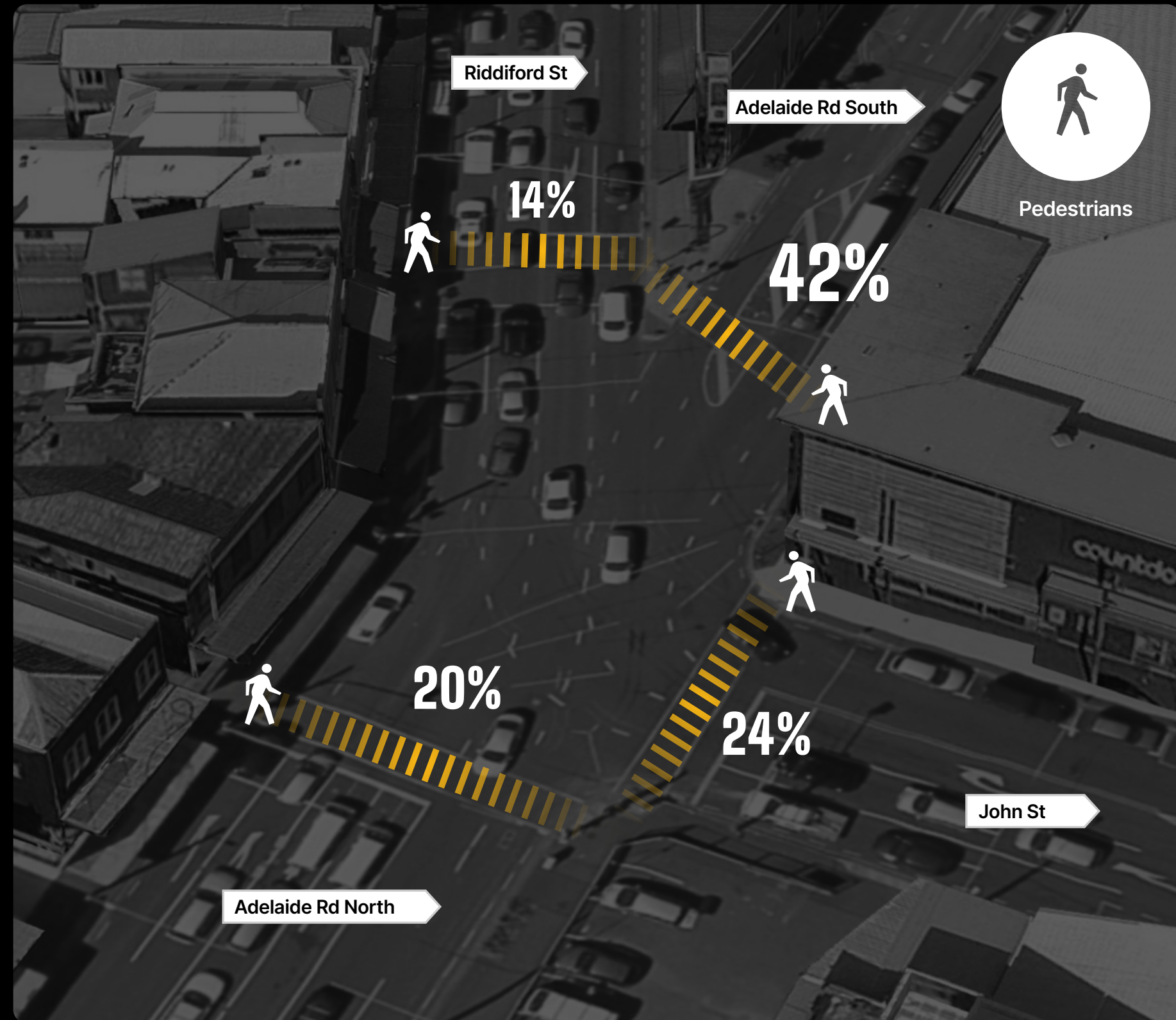
Source: FOLKL Research.

Two out of five pedestrian crossing movements take place at Adelaide Road South.

42%

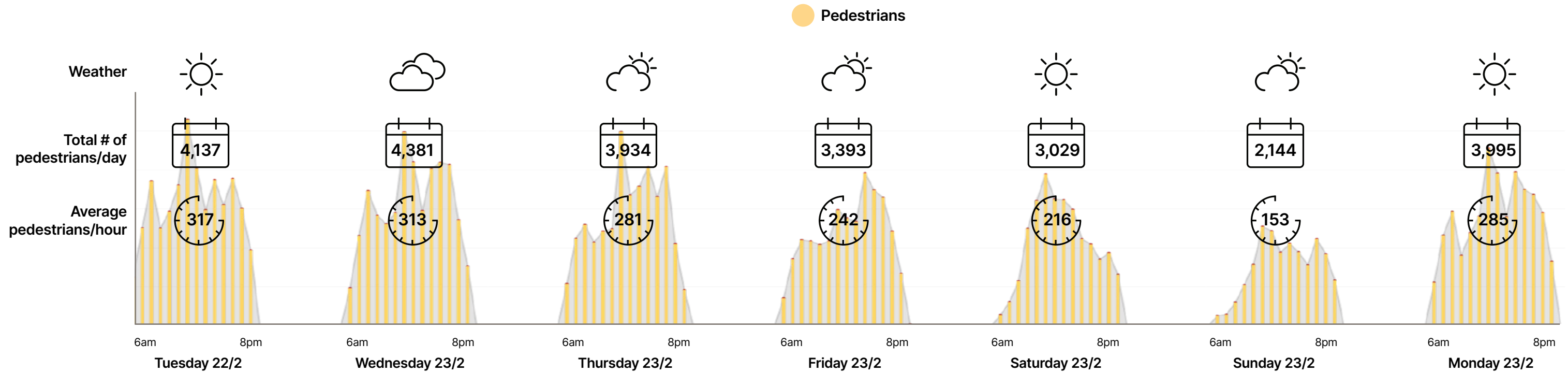
Riddiford Street has the smallest percentage of pedestrian crossing movements, accounting for just

14%



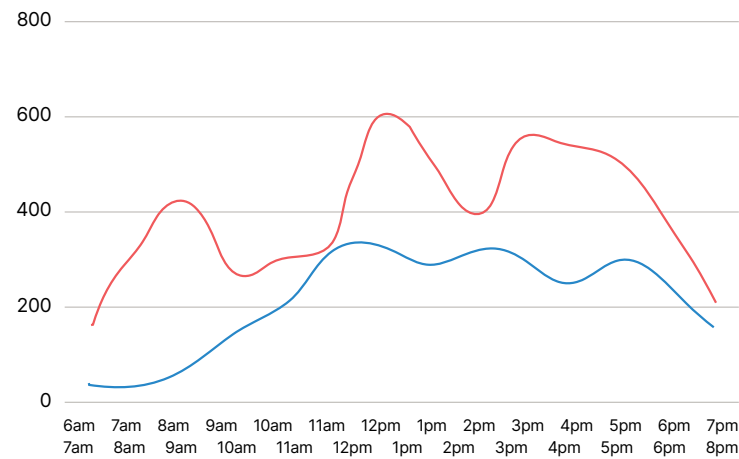
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Weekday behaviour is consistent between the days, with obvious peaks of crossing movements between 7am and 9am, midday, and between 3pm and 5pm. Weekend behaviour sees a more gradual increase in pedestrian movements, along with a lower total volume.



Distribution of pedestrian crossing movements at all four locations between 6:00am and 8:00pm.

Weekend day Weekday



Comparison distribution between weekend day and weekday.

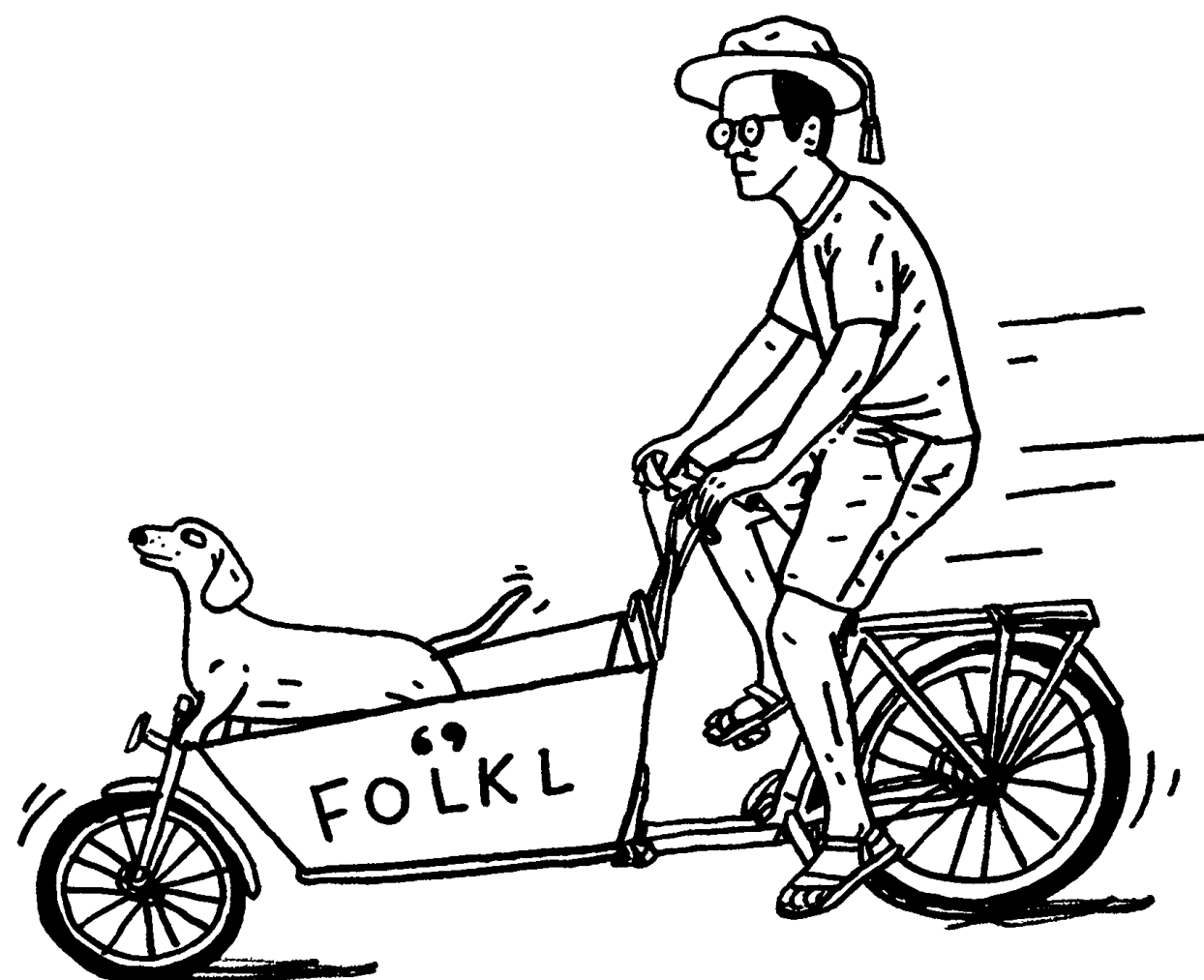
Pedestrian Peak Hour

Weekday - am	07:45am - 08:45am
Weekday - pm	12:15pm - 01:15pm
Weekend - am	11:00am - 12:00pm
Weekend - pm	05:00pm - 06:00pm



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Ngā mihi
Thank you.





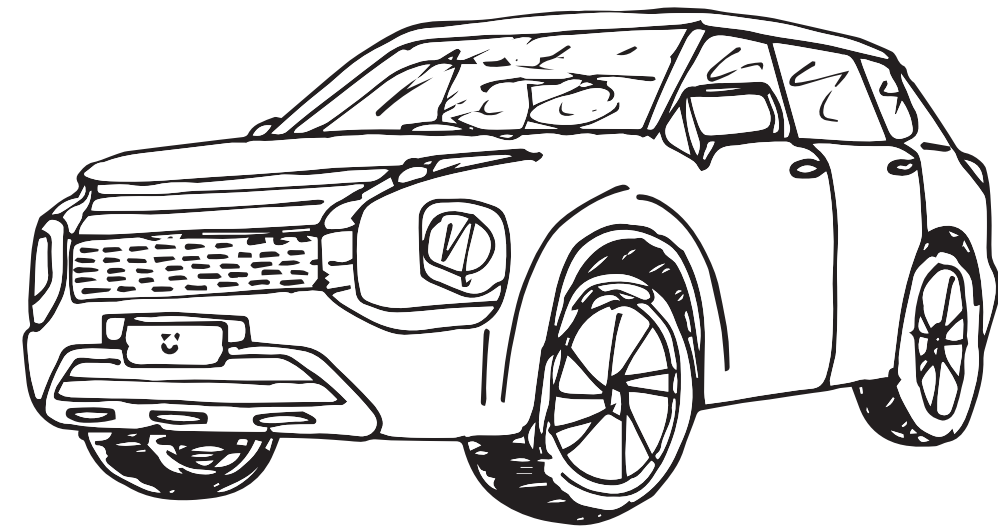
Appendix.



Average Daily Traffic.

This table shows the average daily traffic recorded by classification at this intersection between 6:00am and 8:00pm over the 7 day period.

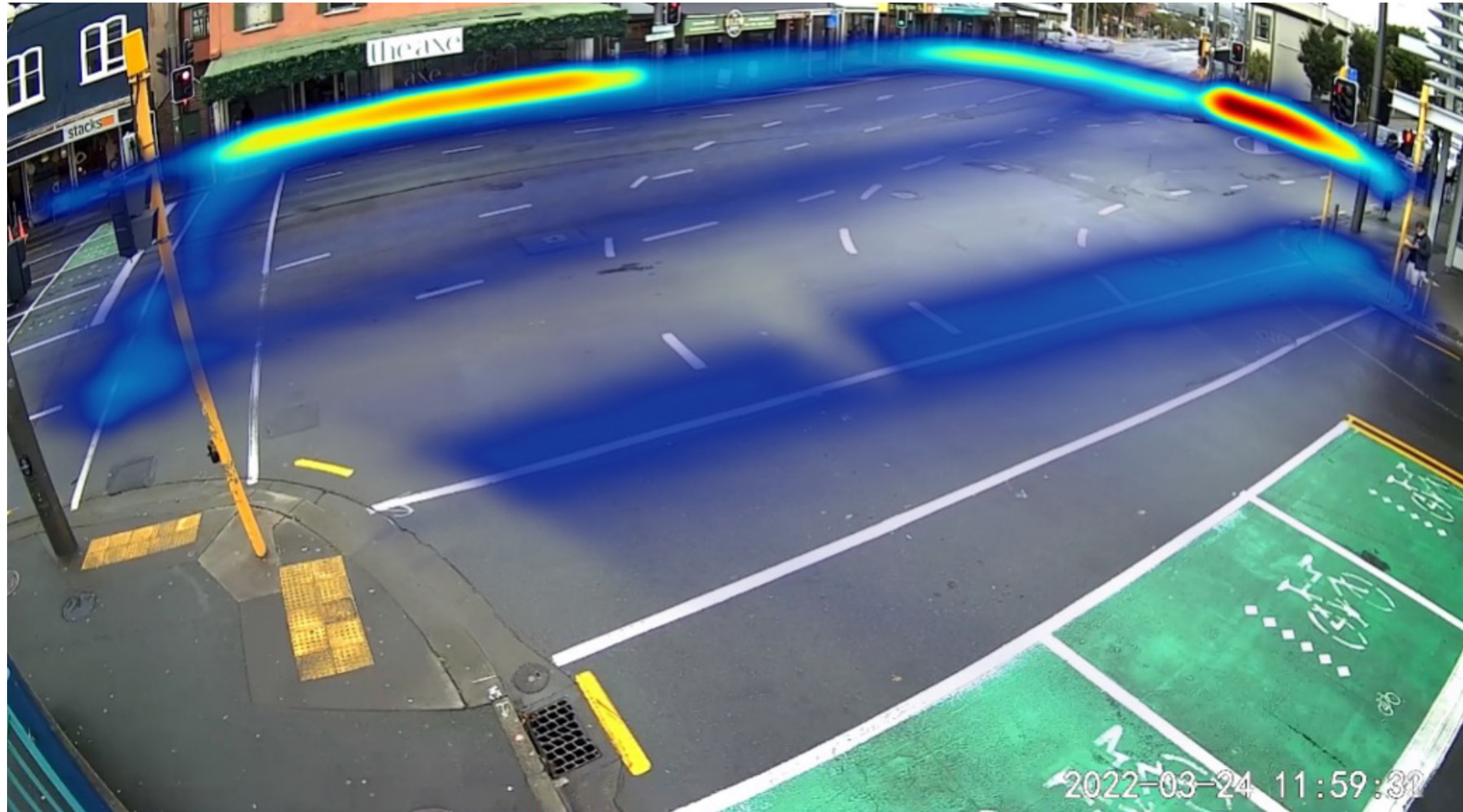
Average Daily Traffic (recorded between 6:00am and 8:00pm)			
Time frame/Classification	Pedestrian	Cyclist	Motor Vehicle
All days (7)	3,573	1,090	27,264
Weekdays (5)	3,968	1,250	28,489
Weekend days (2)	2,587	692	24,202



Collision Points.

This heatmap shows areas where pedestrians and cyclists intersect with other vehicles. Hot areas represent places with high potential collision occurrence. Cold areas represent areas with lower collision occurrence.

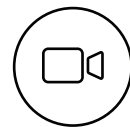
Please note: This aspect of analysis is still in development and will be further refined for the final report.



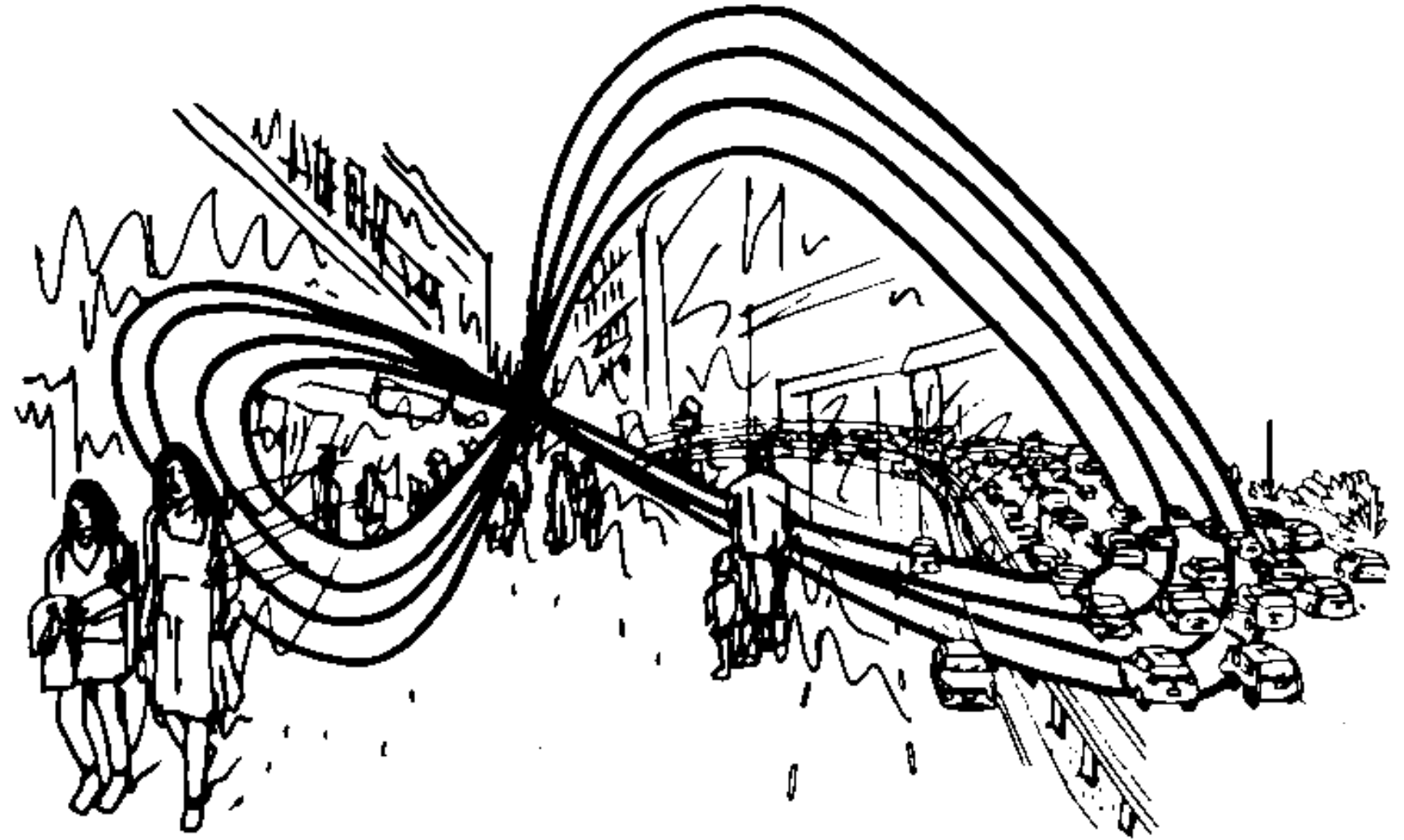
FOLKL Vision.

FOLKL Vision is a proprietary traffic analysis tool which combines digital processing with manual coding to produce a robust understanding of how people use space. The purpose of FOLKL Vision is to provide an indication of use rather than completely accurate traffic counts. The accuracy of digital processing traffic counts ranges from 95% - 100%. Speed calculation is 90% - 100%, and is dependent on precision distance of measurement. Manual coding is used to inform digital processing strategy and determine margin of error within the sample.

For this project 15 minute windows of video observation footage were selected at random. Each traffic count determined through digital processing were cross-checked with manual counts. This spot check process encompassed each of the 7 days, every intersection or crossing point, and each classification. The result was an accuracy level of 99.6%.



Accuracy level of
99.6%





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