

Wellington St Baseline Data Summary Report

Wellington Street Stages 3 & 4

12.2023

Strategic Transport



Yarra City Council acknowledges the Wurundjeri Woi Wurrung people as the Traditional Owners and true sovereigns of the land now known as Yarra. We also acknowledge the significant contributions made by other Aboriginal and Torres Strait Islander people to life in Yarra. We pay our respects to Elders from all nations and to their Elders past, present and future.

Table of Contents

Table of Figures.....	4
Introduction	5
Project background.....	5
Data collection background	5
Data summary	6
Bicycle speeds and volumes	6
2023 camera data.....	6
'Super Tuesday' Bicycle Counts.....	6
October 2023 Bicycle Counts	6
Observations.....	6
Motor vehicle counts.....	8
Observations.....	10
Walking volumes.....	12
Observations.....	12
Origin-Destination Vehicle Counts.....	14
Observations.....	17
Air pollution	19
Observations.....	19
Noise pollution	20
Observations.....	20
Car parking	21
Observations.....	22
Crash statistics	25
Observations.....	25
Tree canopy.....	26
Next steps	27

Table of Figures

Figure 1– Percentage of vehicles travelling on Wellington Street at Johnston Street between March and June 2023	7
Figure 2 - Five day (weekday) bicycle volume average at site ATC2 on Wellington Street at Easey Street in October 2023	7
Figure 3 - Vehicle and bicycle traffic count locations map	8
Figure 4 - ATC2 Wellington St (btw Sackville St & Easey St) Northbound Average Weekday 24 hour Traffic Volumes	11
Figure 5 - ATC2 Wellington St (btw Sackville St & Easey St) Southbound Average Weekday 24 hour Traffic Volumes	11
Figure 6 - Pedestrian volumes on Wellington Street by day of the week	12
Figure 7 - Pedestrian volumes on Wellington Street as a proportion of total traffic	13
Figure 8 – Map of destination stations used for origin-destination data collection.....	15
Figure 9 - Map of car parking data collection area (October 2023).....	21
Figure 10 - Map of Australian Bureau of Statistics Statistical Area 1s within the Wellington Street Stages 3 and 4 study area	22
Figure 11 - On-street car parking occupancy (Wednesday).....	23
Figure 12 - On-street car parking occupancy (Saturday)	23
Figure 13 - Comparison of on-street car parking occupancy in Stage 3 vs Stage 4 area (October 2023)	24
Figure 14 - Comparison of restricted and unrestricted on-street car parking bays by day	24

Introduction

The purpose of this report is to provide a summary of baseline data collected as part of concept design work for Stages 3 & 4 of upgrading cycling infrastructure on Wellington Street in Collingwood and Clifton Hill.

Project background

Wellington Street Stages 3 & 4 is a project funded to deliver a compliant New Deal for Cycling and Strategic Cycling Corridor route on Wellington Street, Collingwood, between Johnston Street and Queens Parade in Collingwood and Clifton Hill.

The section of Wellington Street south of Johnson Street (stages 1 and 2) was upgraded to a NDC compliant standard over 5 years and was completed in 2015. However, the *Yarra Transport Strategy 2022 - 32* identifies Wellington Street north of Johnston Street (stages 3 and 4) as non-compliant route sections.

In response to this, Council allocated \$100,000 for planning, consultation and early design work in the 2023-24 Budget. This commitment is also reflected in Council's draft *Transport Action Plan*.

To inform project work, extensive data have been collected together with analysing existing relevant information. Combined with community engagement findings, these will form the main basis for the project progressing to next stages.

Data collection background

Given the scale and scope of the project, 14 different datasets have been collected. Not all are included in this report as they relate to operational details. For example, underground services and waste collection routes.

Data summary

Bicycle speeds and volumes

Several data sources have been used to collect information on bicycle speeds and volumes.

2023 camera data

Cameras have been mounted at the intersection of Johnston Street and Wellington Street in Collingwood since February 2023. It captures a wide range of data across six countlines covering all possible crossings of the intersection.

This technology records the speed and volume of different types of vehicles.

Data referenced in this report relates to the period of March 2023 to December 2023, unless otherwise stated.

'Super Tuesday' Bicycle Counts

Super Tuesday counts conducted by Bicycle Network measured 37 sites across the City of Yarra in peak times. This identified the intersection of Wellington Street and Johnston Street as the busiest site with 1,384 movements between 7am and 9am.

October 2023 Bicycle Counts

Bicycle counts were collected at the same time as other traffic counts. These data record the number, speeds and types of vehicles using Wellington Street and surrounding streets. This is achieved by placing tubes and associated electronic counters at various locations.

Tubes were placed at 26 sites across the area over a seven day period in October 2023.

Count locations are shown in Figure 2 and Table 1 below.

Observations

- On average, over 1,500 people travel on Wellington Street at Johnston Street by bike every day. This makes up around 19% of all vehicles.
- There has been a generally 56% increase in cyclist volumes on Wellington Street since the same time in 2022. This is attributed to improvements to the infrastructure in Stages 1 and 2, as well as subsequent improvements on feeder routes – particularly through the Popup Bike Lanes program.
- Bicycles make up a lower proportion of vehicle traffic on weekends than weekdays. This suggests that this section of Wellington Street north of Johnston Street is being used primarily for commuting and transport purposes.
- The 85th percentile speed for bicycles on Wellington Street at Easey Street was 28.1 km/h and 23.9 km/h on Wellington Street at Hodgkinson Street. This difference likely reflects the different road conditions and types of intersections present at the count locations.

Figure 1– Percentage of vehicles travelling on Wellington Street at Johnston Street between March and June 2023

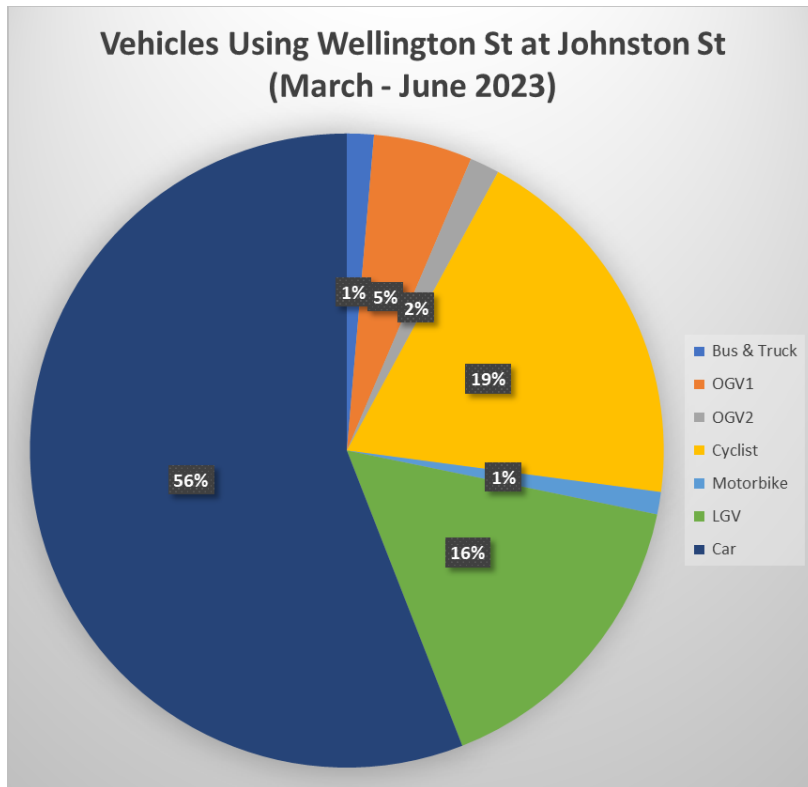
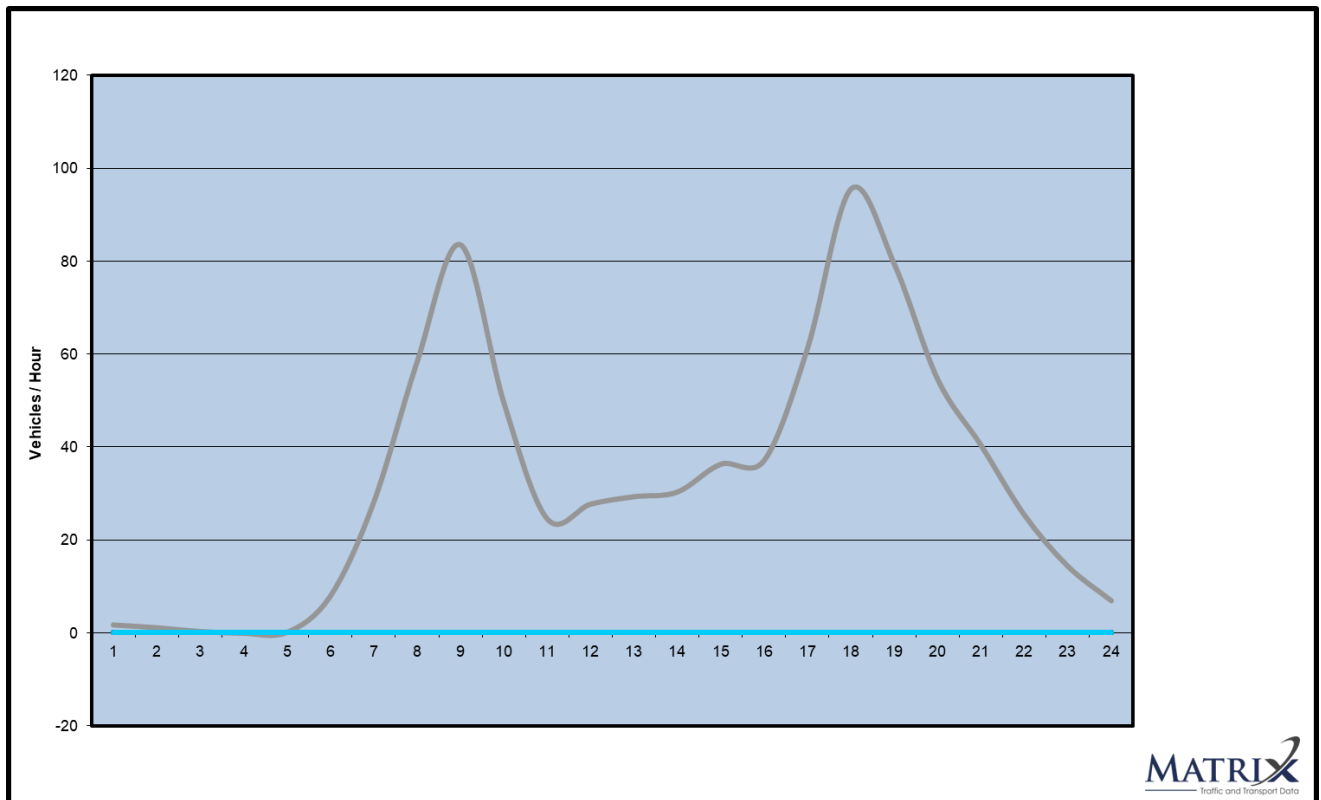


Figure 2 - Five day (weekday) bicycle volume average at site ATC2 on Wellington Street at Easey Street in October 2023



Motor vehicle counts

These data record the number and types of vehicles using Wellington Street and surrounding streets. This is achieved by placing tubes and associated electronic counters at various locations.

Tubes were placed at 26 sites across the area over a seven day period in October 2023.

Count locations are shown in Figure 3 and Table 1- Vehicle and bicycle traffic count locations list below.

Figure 3 - Vehicle and bicycle traffic count locations map

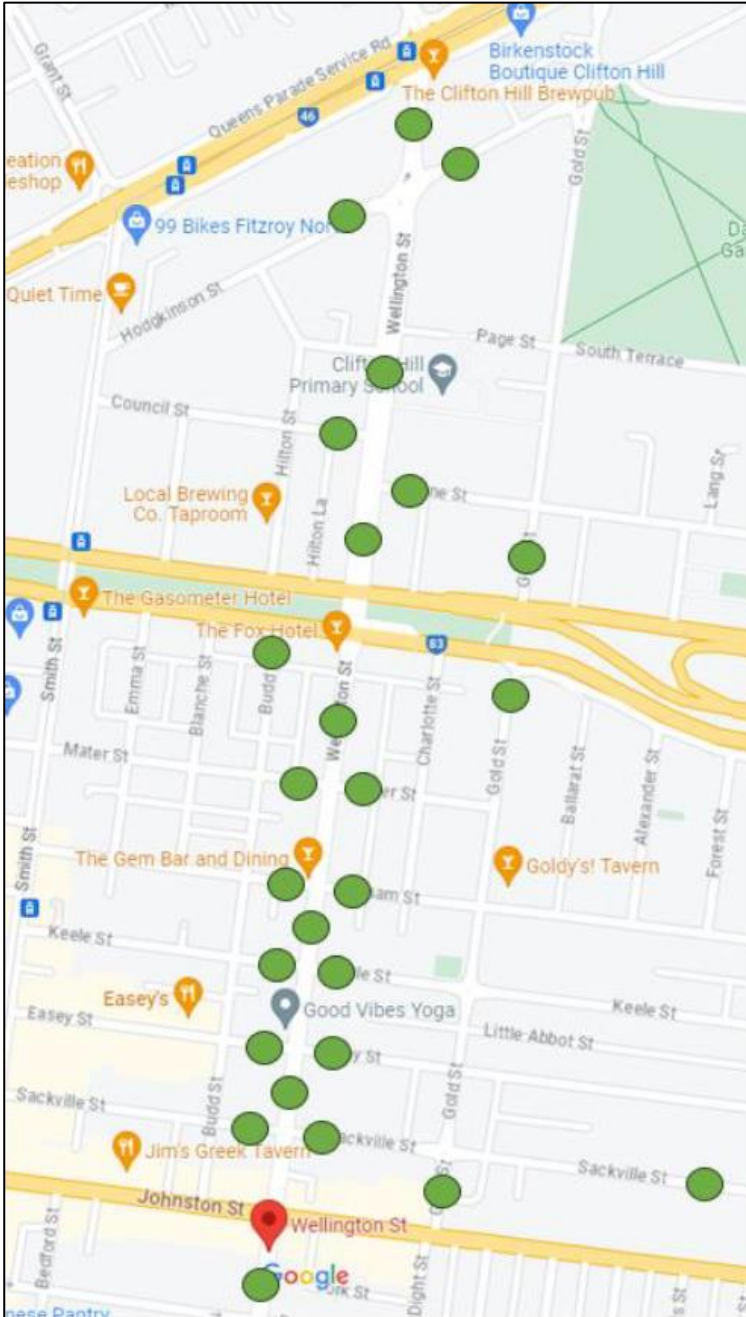


Table 1- Vehicle and bicycle traffic count locations list

SITE NO .	STREET	BETWEEN	SUBURB
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1	Wellington Street	Alexandra Parade	Mater Street	Collingwood
2	Wellington Street	Easey Street	Sackville Street	Collingwood
3	Wellington Street	Hodgkinson Street	Queens Parade	Clifton Hill
4	Wellington Street	Hodgkinson Street	Noone Street	Clifton Hill
5	Wellington Street	Hotham Street	Keele Street	Collingwood
6	Wellington Street	Otter Street	Perry Street	Collingwood
7	Gold Street	Alexandra Parade	Mater Street	Collingwood
8	Sackville Street	Gold Street	Hoddle Street	Collingwood
9	Easey Street	Gold Street	Wellington Street	Collingwood
10	Hotham Street	Blanche Street	Budd Street	Collingwood
11	Hotham Street	Charlotte Street	Wellington Street	Collingwood
12	Mater Street	Blanche Street	Budd Street	Collingwood
13	Easey Street	Budd	Wellington	Collingwood
14	Mater Street	Gold Street	Wellington	Collingwood
15	Noone Street	Wellington	Gold Street	Clifton Hill
16	Council Street	Hilton	Wellington	Clifton Hill
17	Hodgkinson Street	Hilton	Wellington	Clifton Hill
18	Hodgkinson Street	Gold Street	Wellington	Clifton Hill
19	Budd Street	Mater	Alexandra Parade	Collingwood
20	Wellington Street	Hilton	Gold Street	Clifton Hill

21	Gold Street	Alexandra Parade	Noone Street	Clifton Hill
22	Keele street	Budd Street	Wellington Street	Collingwood
23	Keele street	Wellington Street	Gold Street	Collingwood
24	Sackville Street	Budd Street	Wellington Street	Collingwood
25	Sackville Street	Wellington Street	Gold Street	Collingwood
26	Gold Street	Johnston street	Sackville Street	Collingwood

Observations

- Wellington St between Mater Street and Alexandra Parade (Site 1) on a Friday recorded the highest total vehicle count with 11,085 vehicles.
- While Sundays recorded significantly lower vehicle volumes overall, Saturdays recorded volumes comparable to weekdays (except Mondays which were also low).
- Wellington Street between Queens Parade and Alexandra Parade (Site 20) records significantly lower volumes than between Alexandra Parade and Johnston Street (Site 1).
- Noone Street (Site 15), Hodgkinson Street (Site 18) and Gold Street (Site 21) experience a third peak between approximately 2:30pm and 3:30pm on weekdays. This is probably due to school start and finish times.
- Wellington Street between Sackville Street and Easey Street (Site 2) carries significantly more traffic in PM than AM peak on weekdays and weekends. This is due to higher southbound volumes in PM peak than northbound volumes in AM peak (see Figure 4 and Figure 5 below).

Figure 4 - ATC2 Wellington St (btw Sackville St & Easey St) Northbound Average Weekday 24 hour Traffic Volumes

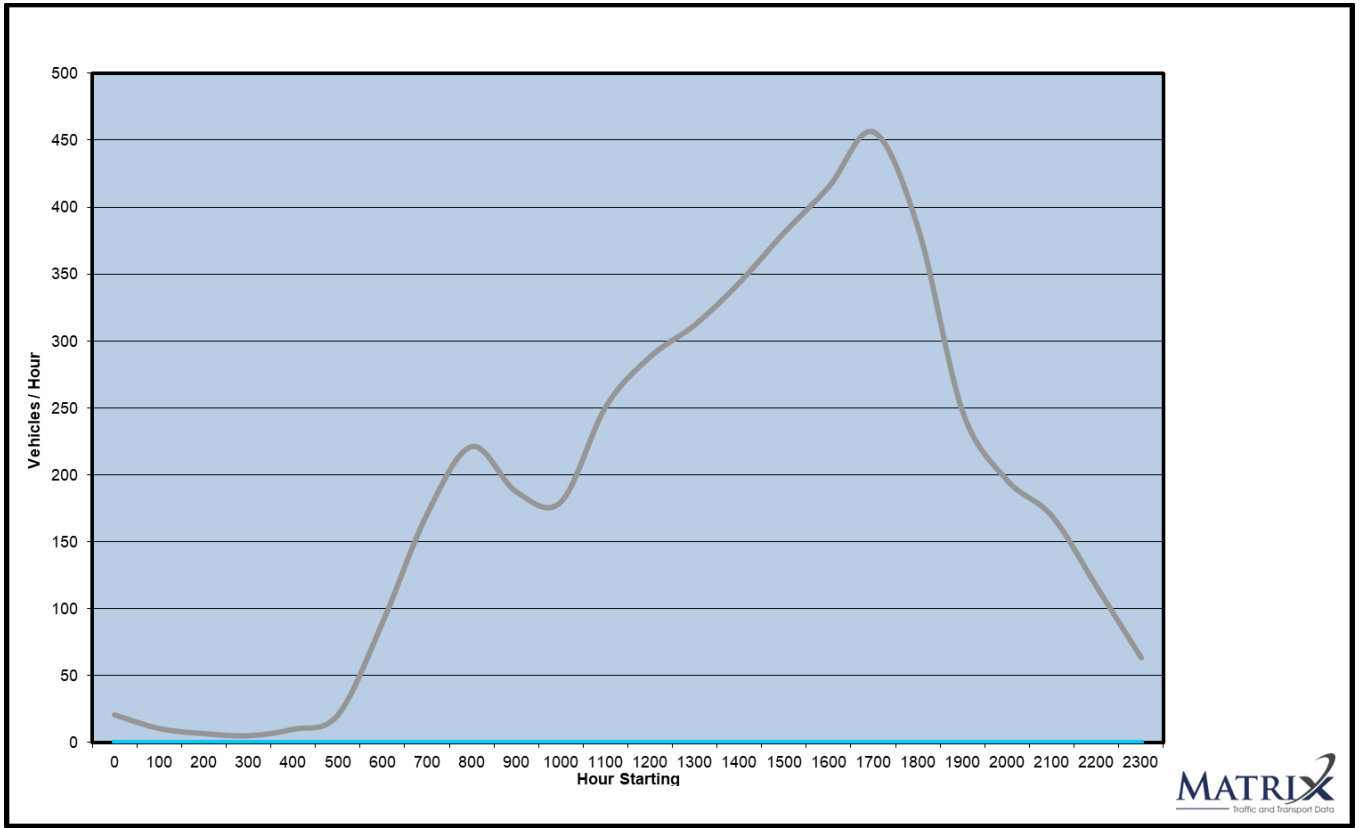
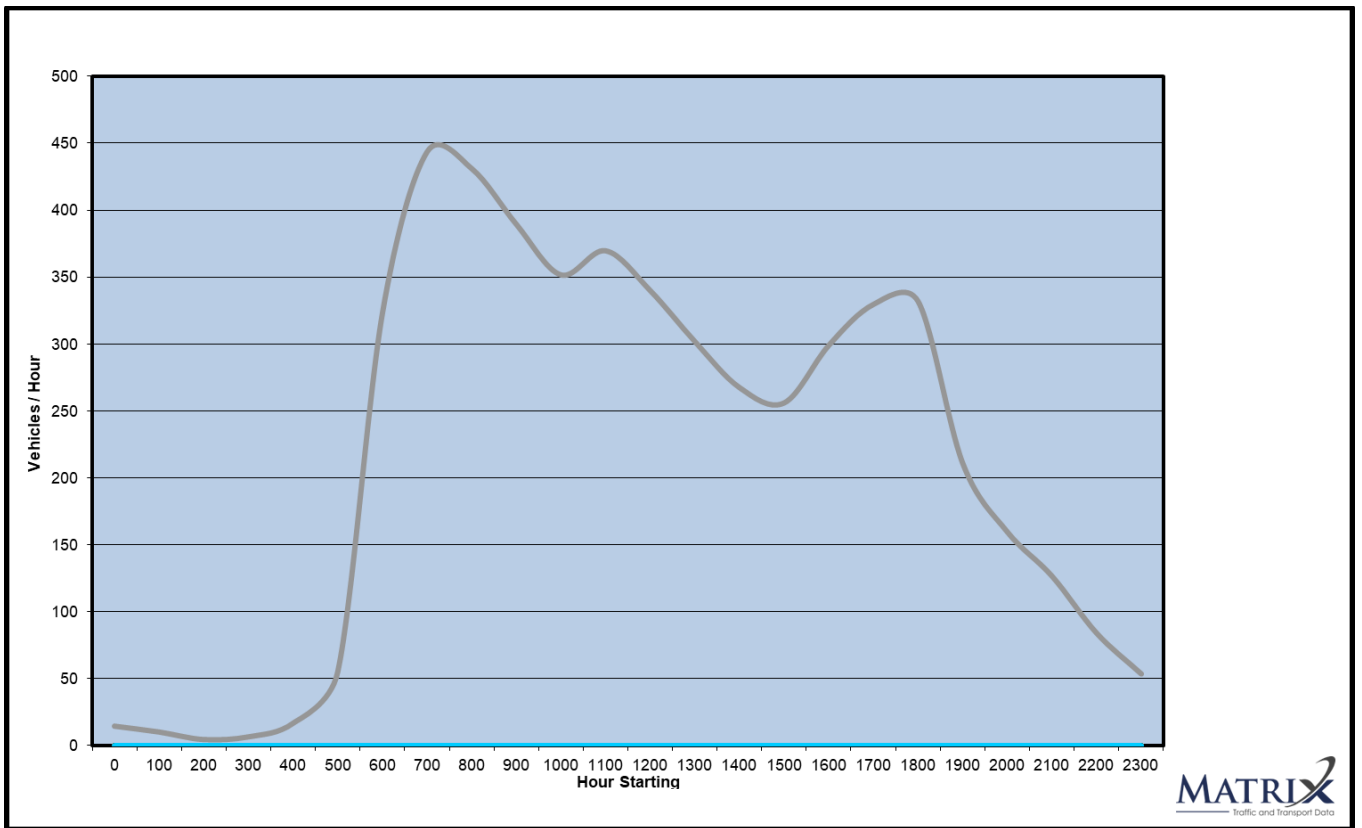


Figure 5 - ATC2 Wellington St (btw Sackville St & Easey St) Southbound Average Weekday 24 hour Traffic Volumes



Walking volumes

These data recorded the number of people walking. This used cameras set up that detect and count different transport modes.

One site was located at the intersection of Wellington Street and Johnston Street, set up and managed by an independent consultant. Data has been recorded for several months to give points of comparison. For ease of reading and more accurate comparison to other data, only the months of October and November 2023 are included in this report unless otherwise stated.

Observations

- Fridays and Saturdays record the highest numbers and percentages of total traffic for people walking, likely due to the nighttime commercial activities around Johnston Street in particular.
- On weekdays, there were more people riding bikes at this site on Wellington Street as a total number. However, on weekends, more people walking were recorded.
- The highest volume of people walking was recorded on Saturday 21 October 2023. This made up 27% of all traffic.

Figure 6 - Pedestrian volumes on Wellington Street by day of the week

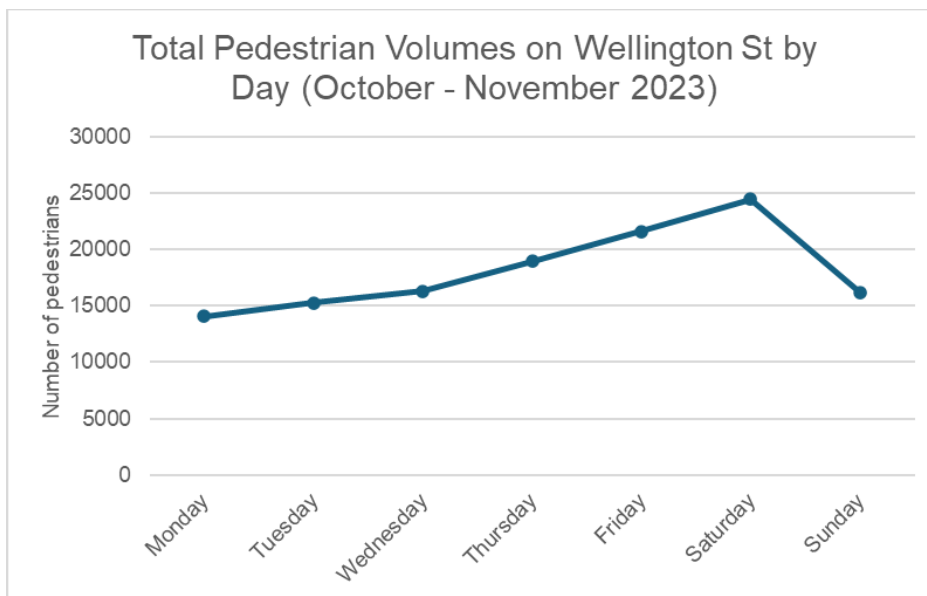
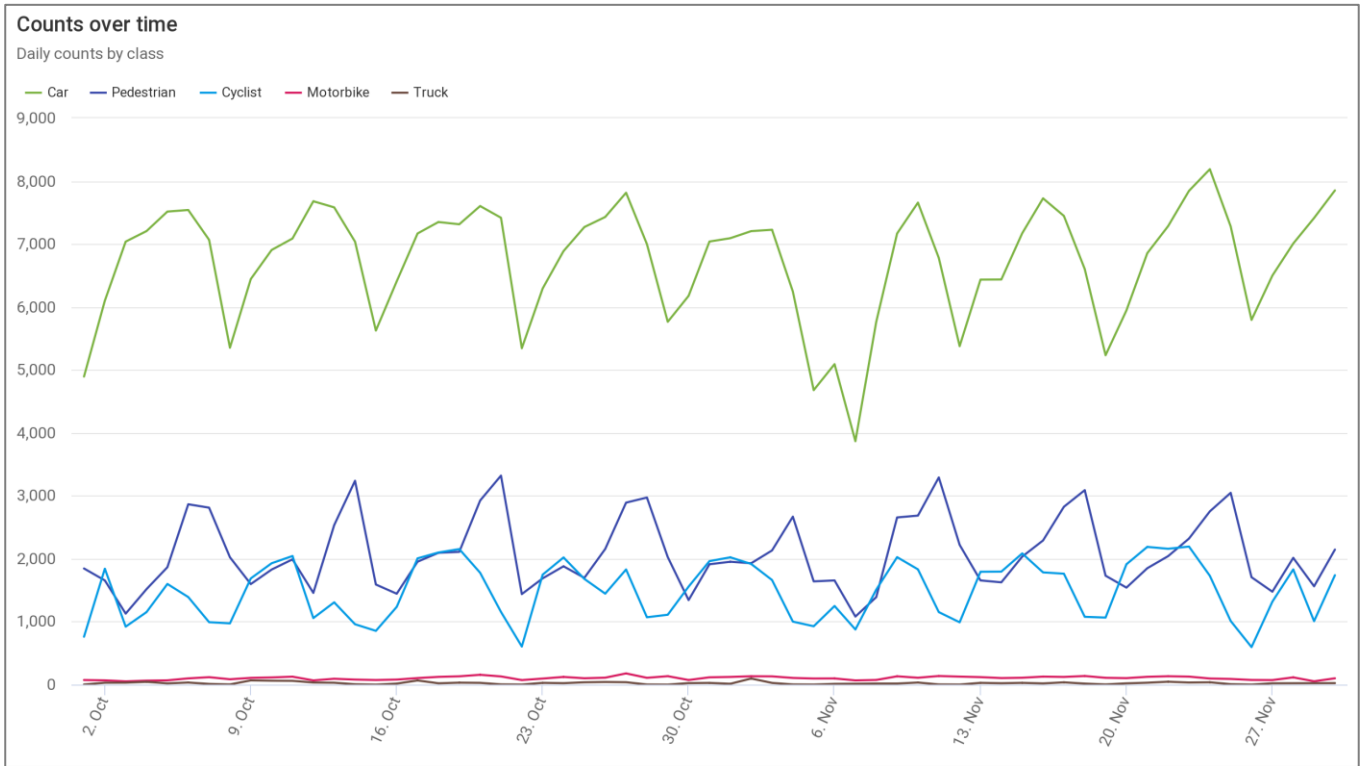


Figure 7 - Pedestrian volumes on Wellington Street as a proportion of total traffic



Origin-Destination Vehicle Counts

These data record the routes that vehicles take to get to and from Wellington Street and surrounding streets and the time taken to travel between each station. This is achieved by recording license plates of vehicles as they pass designated sites around the cordoned area.

No road disruptions, school or public holidays, or other significant disruptions occurred during the survey period.

The survey used video capture techniques to record vehicle number plates on weekdays and Saturdays in October 2023.

The information was recorded at 12 stations, covering movements in both directions. Number plate observations were classified into two vehicle classes:

- Light vehicles
- Heavy vehicles

The analysis of the survey presented here encompasses pairwise matching between all possible combinations of origin and destination stations, except for the matches from any station to itself.

Records of number plate observations were reviewed to identify if the number plate was complete during data processing. Number plates were matched to identify travel time distributions between logical station pairs. This process assists to identify possible problems with the data and to provide a set of minimum and maximum travel time cut-offs for 'trips'.

Destination stations are shown in Figure 8 and Table 2 below.

Figure 8 – Map of destination stations used for origin-destination data collection

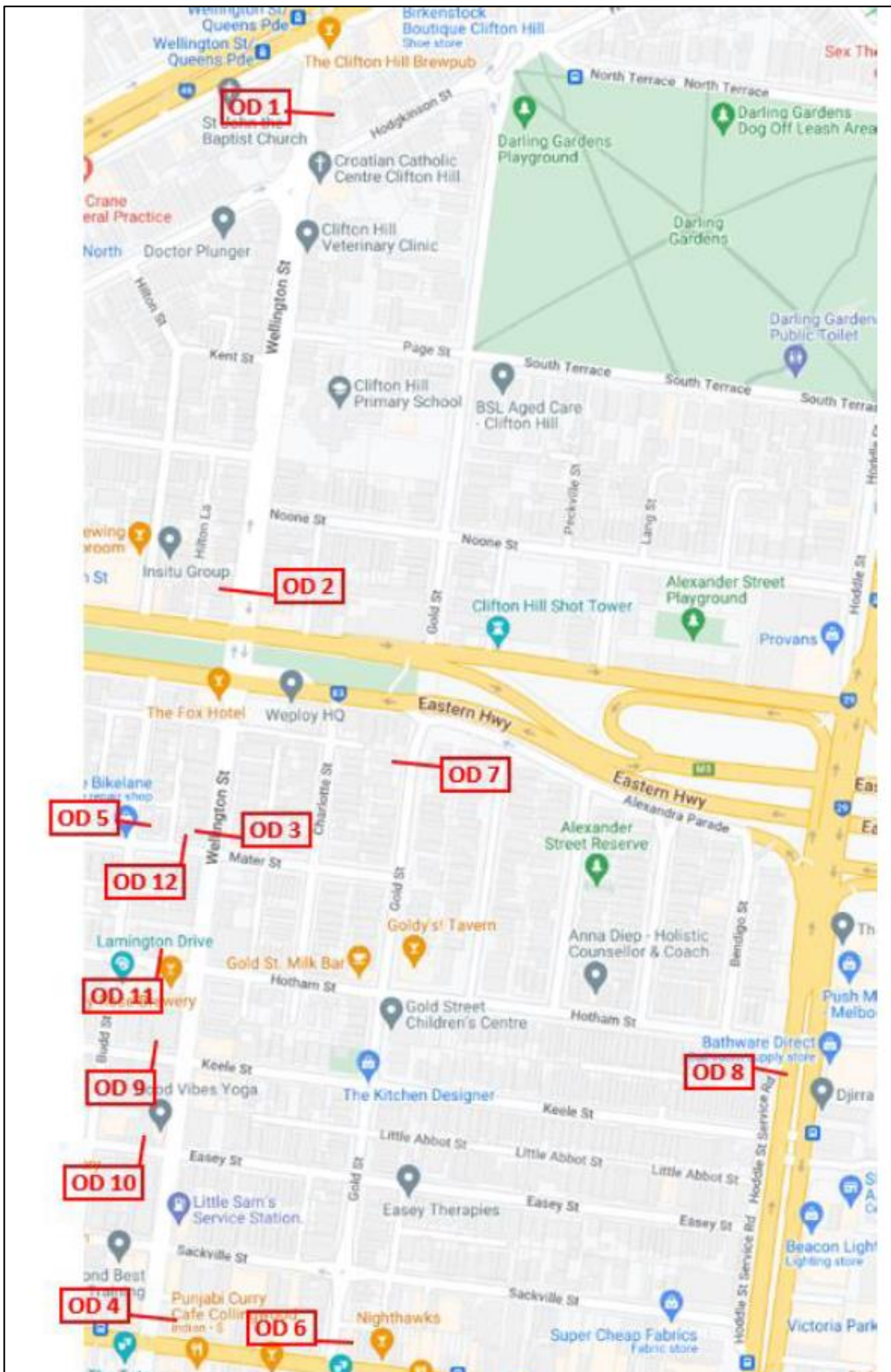


Table 2 - Table of destination stations used for origin-destination data collection

Station	Direction	Road	Location
1N	Northbound	Wellington Street	South of Queens Parade
1S	Southbound	Wellington Street	South of Queens Parade
2N	Northbound	Wellington Street	North of Alexandra Parade
2S	Southbound	Wellington Street	North of Alexandra Parade
3N	Northbound	Wellington Street	South of Alexandra Parade
3S	Southbound	Wellington Street	South of Alexandra Parade
4N	Northbound	Wellington Street	Between Sackville Street and Johnston Street
4S	Southbound	Wellington Street	Between Sackville Street and Johnston Street
5N	Northbound	Budd Street	Between Alexandra Parade and Mater Street
5S	Southbound	Budd Street	Between Alexandra Parade and Mater Street
6N	Northbound	Gold Street	Between Sackville Street and Johnston Street
6S	Southbound	Gold Street	Between Sackville Street and Johnston Street
7N	Northbound	Gold Street	Between Alexandra Parade and Mater Street
7S	Southbound	Gold Street	Between Alexandra Parade and Mater Street

8N	Northbound	Hoddle Street Service Rd	Between Hotham Street and Hoddle Street
9E	Eastbound	Keele Street	Between Budd Street and Wellington Street
9W	Westbound	Keele Street	Between Budd Street and Wellington Street
10E	Eastbound	Easey Street	Between Budd Street and Wellington Street
10W	Westbound	Easey Street	Between Budd Street and Wellington Street
11E	Eastbound	Hotham Street	Between Budd Street and Wellington Street
11W	Westbound	Hotham Street	Between Budd Street and Wellington Street
12E	Eastbound	Mater Street	Between Budd Street and Wellington Street
12W	Westbound	Mater Street	Between Budd Street and Wellington Street

Observations

Weekday AM Peak

- Most vehicles travelling along Wellington Street had no origin or destination within the study area. This percentage was particularly high in the Stage 3 area south of Alexandra Parade.
- 88% of all vehicles that entered Wellington Street at Alexandra Parade and travelled south did not stop within the survey area.
- 30 vehicles travelling south on Wellington Street made illegal left or right turns at Alexandra Parade.
- 29 vehicles were identified entering Gold Street and exiting onto Hoddle Street via Sackville, Easey or Keel Street, 19% of all vehicles in the Hoddle St service lane.
- There was significant evidence of 'rat running' traffic through neighbourhood streets within the study area. For example, 55% of westbound traffic on Easey Street entered from Alexandra Parade. A similar pattern was observed at Hotham Street, where 59% of the total westbound volume had entered from Alexandra Parade.

Weekday PM Peak

- Similar to AM Peak, most vehicles travelling along Wellington Street had no origin or destination within the study area. This percentage was particularly high in the Stage 3 area south of Alexandra Parade.
- 72% of all vehicles that entered Wellington Street at Johnston Street continued through to Alexandra Parade.
- 82% of all vehicles that entered Wellington Street at Alexandra Parade and travelled south did not stop within the survey area.
- 87% of all vehicles that entered Wellington Street at Johnston Street and travelled north did not stop within the survey area south of Alexandra Parade.
- 28 vehicles travelling south on Wellington Street made illegal left or right turns at Alexandra Parade.
- Again, there was significant evidence of 'rat running'. For example, 73% of all vehicles that entered Gold Street at Johnston Street did not stop within the survey area, and 22% of all vehicles that entered Gold Street at Johnston Street exited onto the Hoddle Street service lane.

Saturday

- While the proportion of vehicles travelling along Wellington Street without an origin or destination within the study area was less on a Saturday, this still made up a significant majority of motor vehicles.
- A lower proportion of total traffic on Wellington Street was recorded entering Wellington Street from Alexandra Parade than on weekdays – 56% on Saturday compared to 64% on Wednesday (AM).

Air pollution

These data record various air quality measures at two sites on Wellington Street. These sites were selected, installed and collected by an independent consultant in October 2023.

One site was located in the Stage 3 area (between Johnston Street and Alexandra Parade) with another site located in the Stage 4 area (between Queens Parade and Alexandra Parade). Data were recorded for a period of eight days to ensure sufficient data were collected and any external factors, such as weather, can be accounted for.

Observations

- The high PM_{2.5} and PM₁₀ levels are strongly correlated with low temperatures, particularly evenings. The independent expert advice is that this strongly suggests wood smoke pollution from nearby residences is the cause.
- PM_{2.5} levels exceeded Environmental Protection Authority (EPA) (n = >50 PM_{2.5}) levels for 'poor' air quality 18% of the time at the Mater Street site

Noise pollution

These data recorded noise levels at two sites on Wellington Street. These sites were selected, installed and collected by an independent consultant in early November 2023.

One site was located in the Stage 3 area (between Johnston Street and Alexandra Parade) with another site located in the Stage 4 area (between Queens Parade and Alexandra Parade). Data were recorded for a period of one week to ensure sufficient data were collected and any external factors, such as weather, can be accounted for.

The format and scope of data was collected in alignment with those required by VicRoads through the Department of Transport & Planning as part of State Government transport projects.

Several factors affect the levels of noise recorded. These include wind speed and direction, nearby construction noise and animals (e.g. cicadas). One of the most significant factors was wind direction carrying traffic noise from Alexandra Parade and the Eastern Freeway, together with traffic noise from Wellington Street directly.

This baseline data will be compared to post-implementation data as part of project monitoring and evaluation to draw other conclusions.

Observations

- Noise levels north of Alexandra Parade are generally lower than those south of Alexandra Parade, suggesting that traffic noise is a significant generator.
- Some short periods of data spikes may be the result of wind changes and cicada noises due to warm weather.

Table 3 – Noise pollution data summary (L_{eq} 24 hour period)

Day	Stage 3 Site (Mater St)	Stage 4 Site (Between Page St and Noone St)
Tuesday	60.3	55.4
Wednesday	62.4	58.9
Thursday	63.1	62.3
Friday	62.5	59.5
Saturday	61.9	57.3
Sunday	45.0	45.8

Car parking

These data were collected in two parts. The first was an inventory of car parking supply and restrictions. The second was to measure usage.

Data were collected on a Wednesday and Saturday in October 2023 on days of fine weather and outside of school holiday, public holiday or major transport disruption periods.

There are a total of 1,221 on-street car parking bays in the study area. 606 of these are located within the Stage 3 area (south of Alexandra Parade) while 615 are located within the Stage 4 area (north of Alexandra Parade).

According to 2021 Australian Census Data from the Australian Bureau of Statistics (ABS), the six Statistical Areas (SA1). There are a total of 1,260 cars owned by dwellings in the area. Note that due to their size, the SA1 numbers include areas that fall outside the study area.

Figure 9 - Map of car parking data collection area (October 2023)

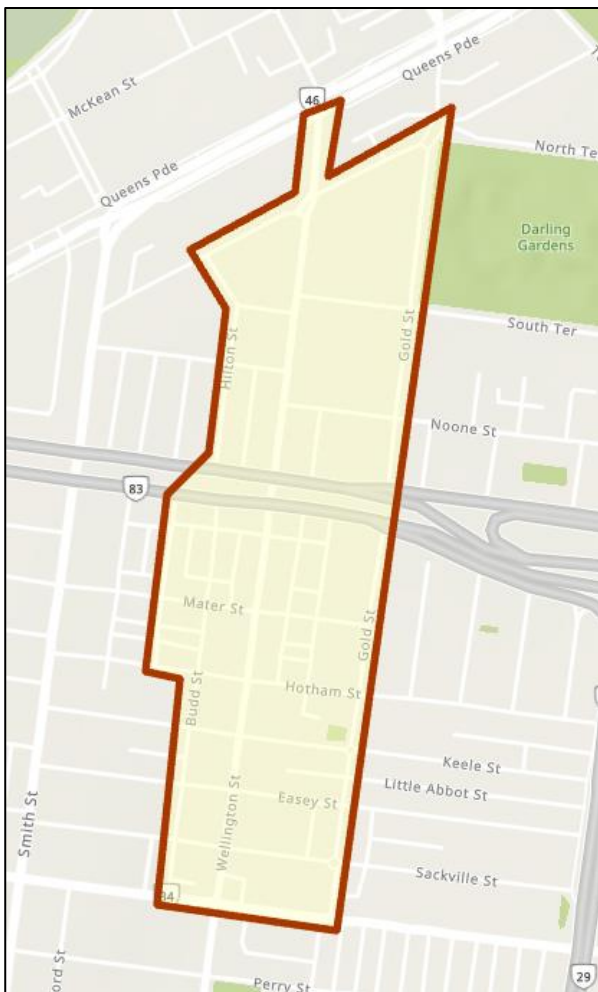
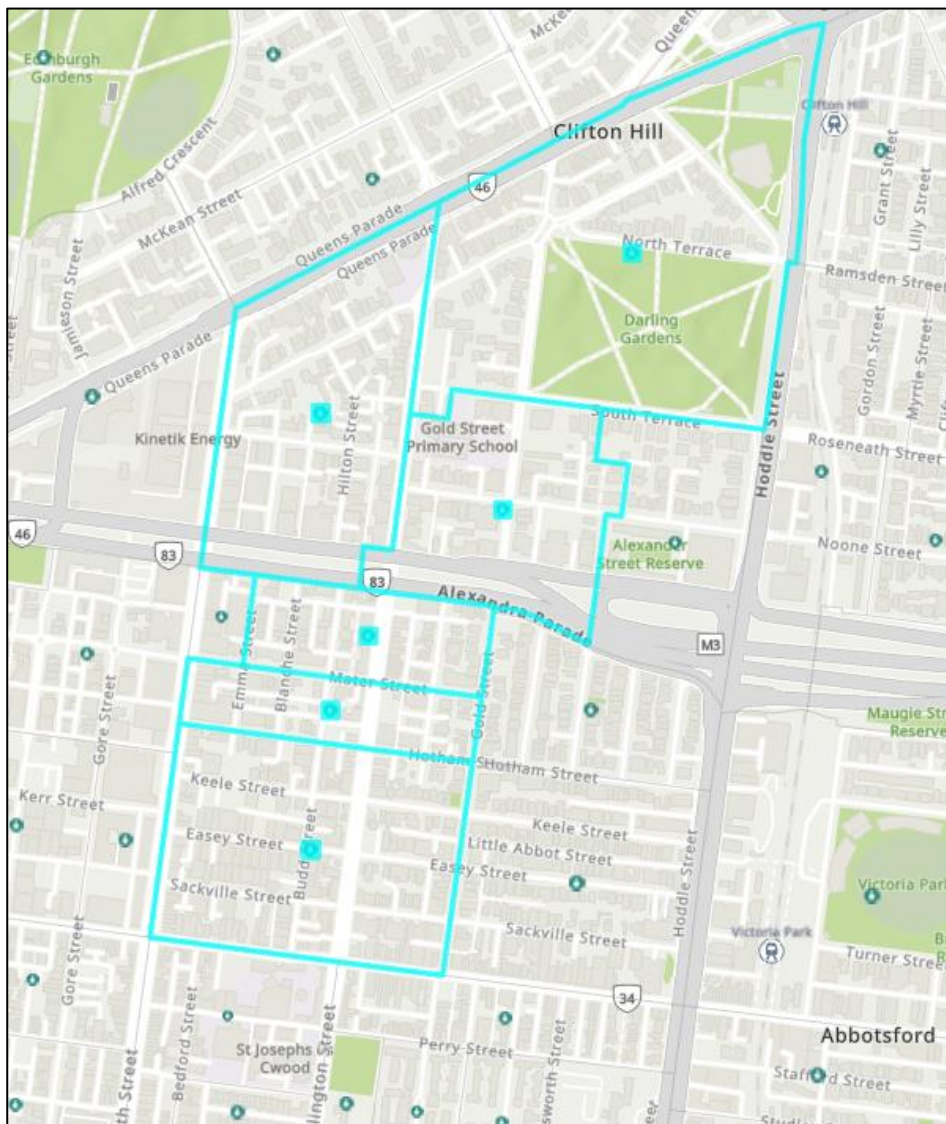


Figure 10 - Map of Australian Bureau of Statistics Statistical Area 1s within the Wellington Street Stages 3 and 4 study area



Observations

- Mean on-street car parking occupancy in the study area was recorded at 75%.
- There are different car parking occupancy characteristics north and south of Alexandra Parade. This is probably due to land use differences, with more commercial activity in the Stage 3 area. Mean occupancy at 7pm in the Stage 3 area on a weekday was recorded at 89% whereas in the Stage 4 area this was only 67% (see Figure 13).
- Peak on-street car parking occupancy on Wellington Street during the recorded period was at 9pm on Saturday.
- At the time of highest demand, there are 212 on-street parking spaces available.
- There are significant areas of unrestricted parking. While 11% of all on-street car parking is unrestricted on weekdays, 59% of on-street car parking spaces are unrestricted on a Saturday and 83% of on-street car parking spaces are unrestricted on a Sunday (see Figure 14).
- Unrestricted sections of car parking experienced the highest demand.
- There are peaks in parking demand during start and finish times in the vicinity of education facilities in the study area.
- There are seven dedicated loading zones (0.6% of total spaces).

Figure 11 - On-street car parking occupancy (Wednesday)

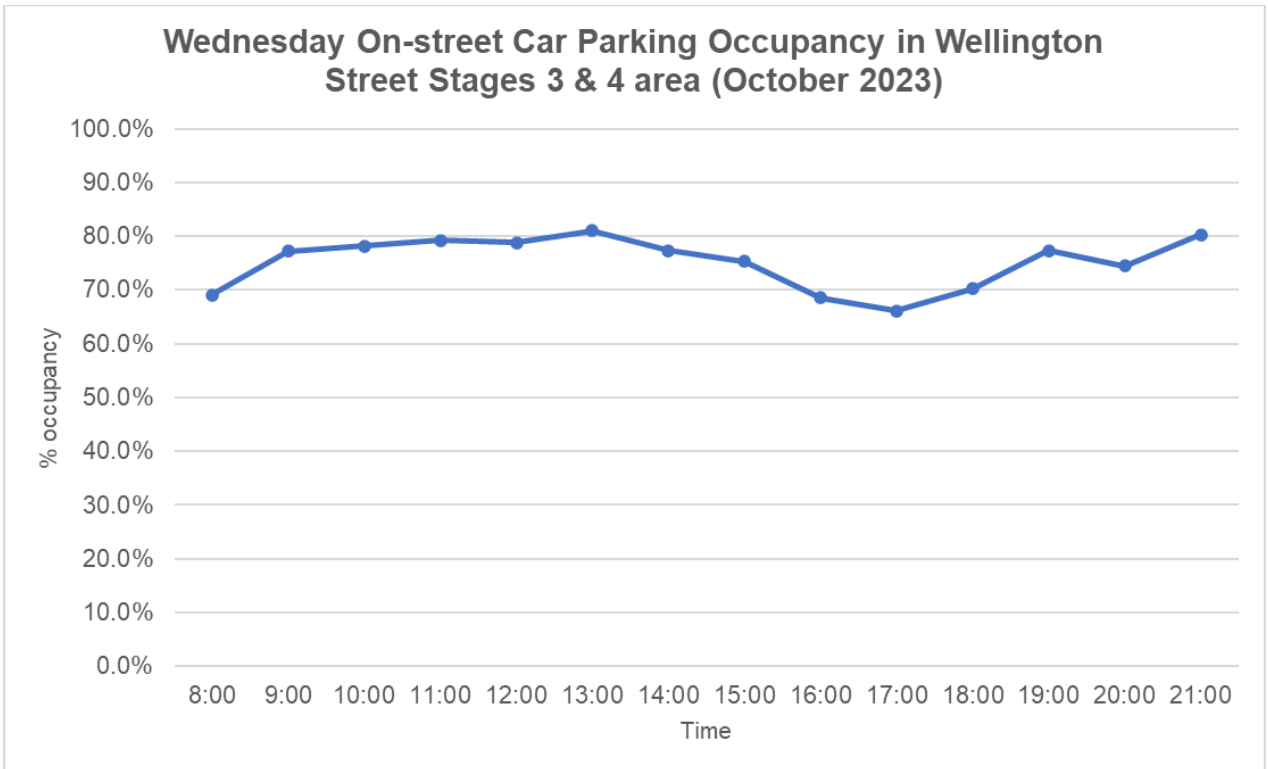


Figure 12 - On-street car parking occupancy (Saturday)

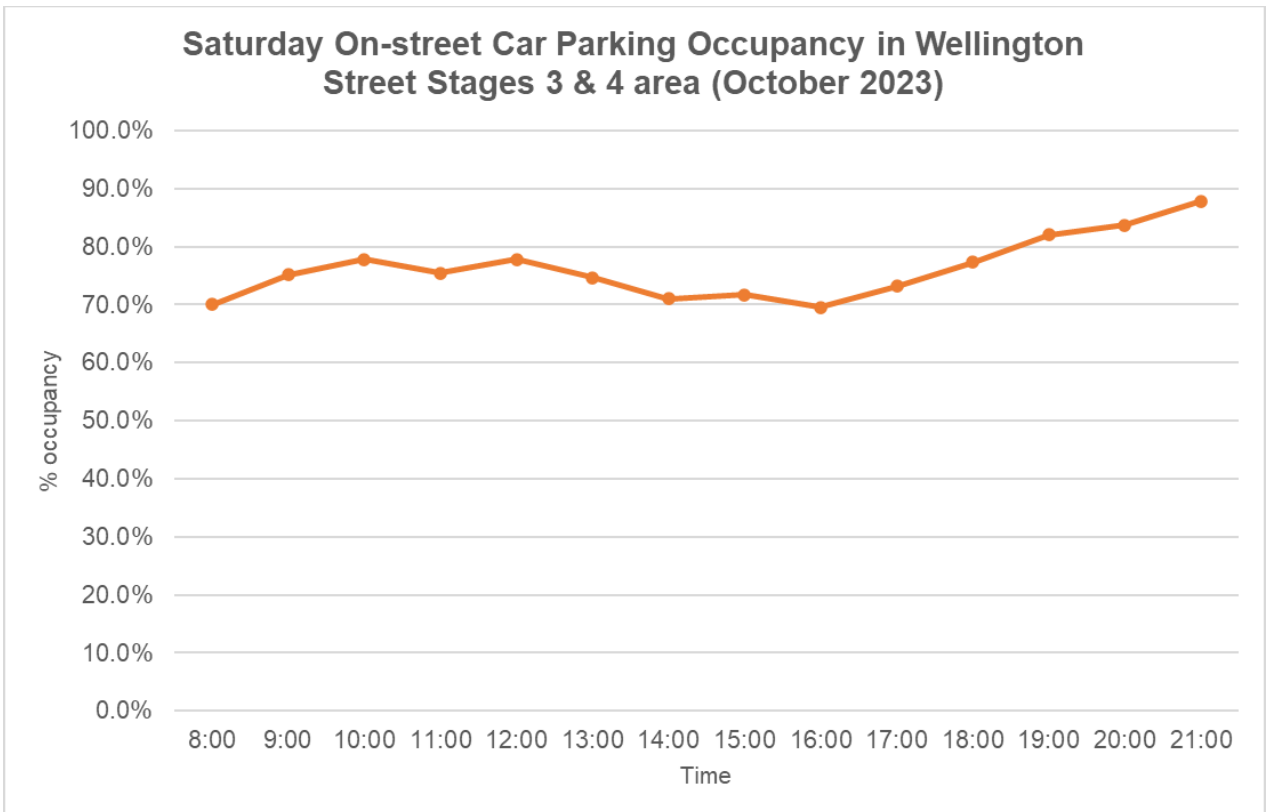


Figure 13 - Comparison of on-street car parking occupancy in Stage 3 vs Stage 4 area (October 2023)

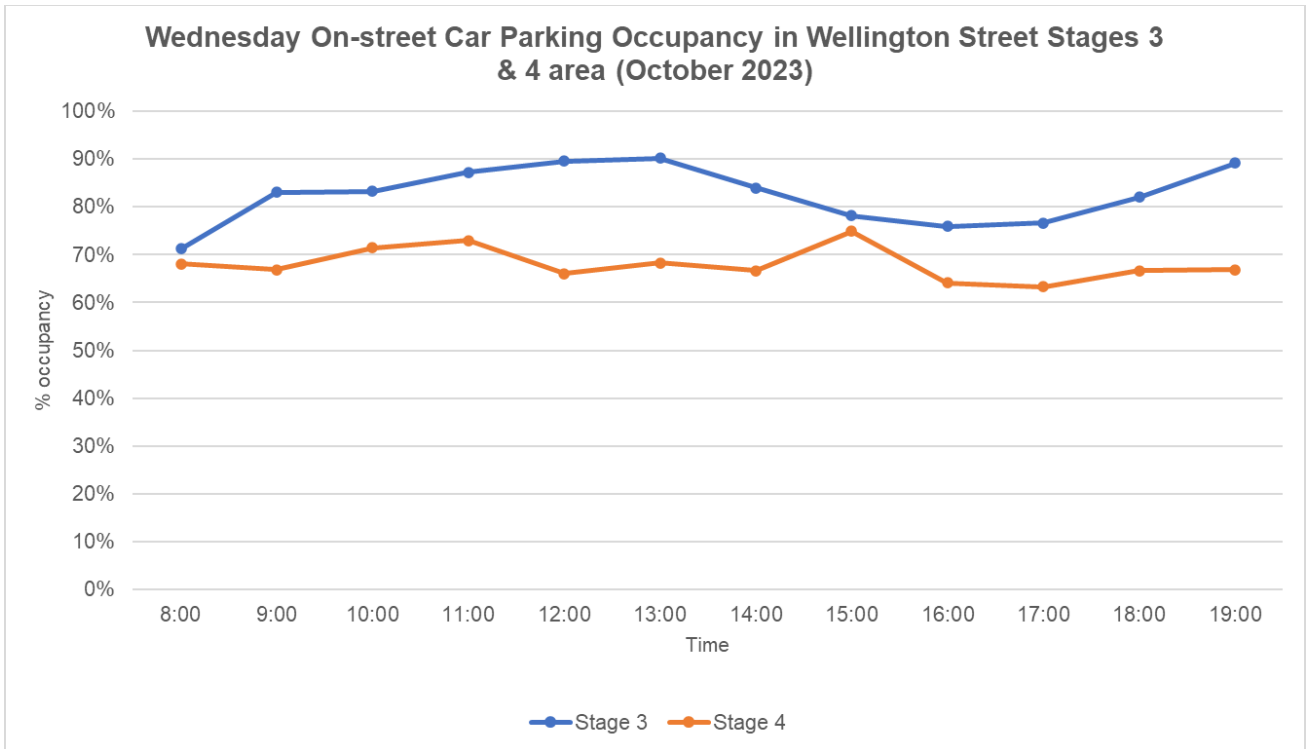
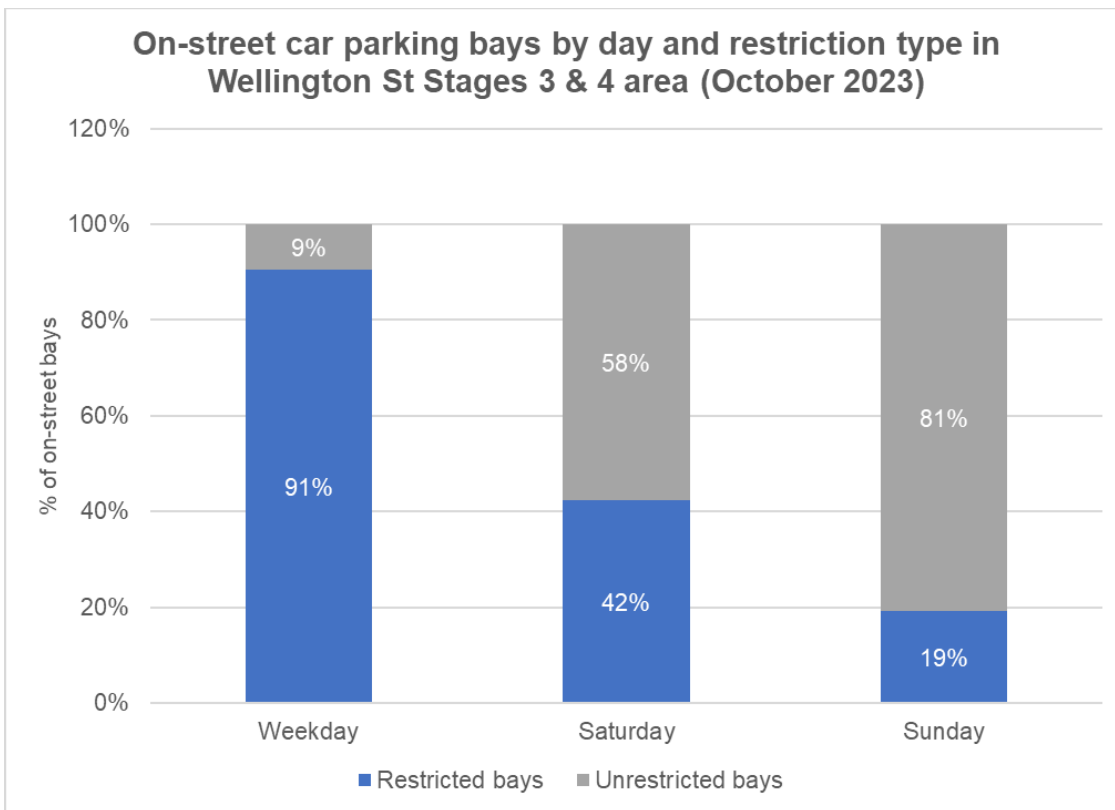


Figure 14 - Comparison of restricted and unrestricted on-street car parking bays by day



Crash statistics

These data are sourced from the 'Crashstats' database published by the State Government through the Transport Accident Commission (TAC) and Department of Transport & Planning (DTP).

The numbers only include incidents reported to Victoria Police. They do not include 'near misses' or any incidents where a police report was not filed. This results in underreporting, especially for people walking and cycling, as only around 1 in 10 of total incidents are found in these data.

Note that some data in this report may not correspond with earlier publications on this topic. This is due to a new data release being published by the State Government in November 2023 with new information that was not previously available to Council.

Note that these data only includes crashes between 2012 and 2022 on Wellington Street between Johnston Street and Alexandra Parade and not any adjacent streets or areas, unless otherwise specified.

Data for 2023 is incomplete. Therefore, only data up to 31 December 2022 (inclusive) is included in this analysis.

Observations

- There have been 98 crashes since 2012.
- Nearly 70% of all crashes between 2018 and 2022 resulted in at least one person on a bike being injured.
- More than half (51%) of crashes involving at least one cyclist was the result of a person driving a car turning in front of a person riding a bike.
- The third most common type of crash (9%) was a vehicle door being opened in the path of a person riding a bike ('dooring').
- The vast majority (92%) of crashes involving at least one cyclist occur on a weekday.
- 6% of all crashes resulted in at least one person walking being injured.
- 64% of all crashes involved a vehicle turning at an intersection.
- 2022 recorded the highest number of crashes involving at least one cyclist over the past ten years.
- Low numbers in 2020 and 2021 reflect lower volumes as a result of COVID-19 lockdowns.
- The increase in crashes is likely due to the significant increase in volumes north of Johnston Street after protected bicycle lanes were installed in Stages 1 and 2.

Tree canopy

Council holds a significant amount of data on street tree location, health and canopy. Wellington Street and the surrounding study area contains several street trees that provide benefits to local communities.

These data have been collected and will be analysed as part of the concept and detailed design process in consultation with communities and relevant council teams.

Next steps

These data and community engagement results will be presented to Council in 2024. Further data will be collected during work and after the project is completed to compare to this baseline data for evaluation and monitoring purposes.