AGENDA

ECONOMIC AND SMART COMMUNITIES STRATEGIC REFERENCE GROUP

Notice is hereby given that a meeting of the Economic and Smart Communities Strategic Reference Group will be held in the Flannel Flower Room on

WEDNESDAY 1 JUNE 2022

Beginning at 6:00PM for the purpose of considering matters included in this agenda.

Committee Members

Cr Sue Heins (Chair)	Councillor
Cr Michael Gencher	Councillor
Cr Sarah Grattan	Councillor
Cr Georgia Ryburn	Councillor
Saul Carroll	
Andy West	
Stuart White	Microsoft Australia
Drew Johnson	Manly Business Chamber
Ngaire Young	Northern Beaches Campus, TAFE NSW
Geri Moorman	
Gordon Lang	
Alexander Coxon	
Stephen Pirovic	International College of Management
Matthew Aderton	

Council Officer Contacts

Kath McKenzie	Executive Manager, Community Engagement & Communications
Claudia Brodtke	Senior Advisor – Governance
Deb Kempe	Team Leader, Economic Development & Tourism
Michelle Carter	Strategic Transport Coordinator
Clinton Rose	Manager, Beach Safety
Tony Blunden	Coordinator Business Support, Lake Macquarie City Council (Online)

Quorum

A majority of members including the Chair or one of the elected Councillors.

Agenda for Economic and Smart Communities Strategic Reference Group Meeting to be held on Wednesday 1 June 2022 in the Flannel Flower Room Commencing at 6:00PM

1.0 ACKNOWLEDGEMENT OF COUNTRY

As a sign of respect, Northern Beaches Council acknowledges the traditional custodians of these lands on which we gather and pays respect to Elders past and present.

2.0 APOLOGIES

All members are expected to attend the meetings or otherwise tender their apologies to the Chair and Governance at governance@northernbeaches.nsw.gov.au.

3.0 DISCLOSURES OF INTEREST

Members should disclose any "**pecuniary**" or "**non-pecuniary**" interests in matters included in the agenda. The Northern Beaches Council Code of Conduct (the Code) provides guidance on managing conflicts of interests.

A **pecuniary interest** is defined in Section 4 of the Code as:

> *A pecuniary interest is an interest that you have in a matter because of a reasonable likelihood or expectation of appreciable financial gain or loss to you or a person referred to in clause 4.3.*

A **non-pecuniary conflict of interest** is defined in Section 5 of the Code as:

> *A non-pecuniary conflict of interest exists where a reasonable and informed person would perceive that you could be influenced by a private interest when carrying out your official functions in relation to a matter.*

If you required further information or guidance about disclosing an interest please contact Governance at governance@northernbeaches.nsw.gov.au.

4.0 CONFIRMATION OF MINUTES OF PREVIOUS MEETING

4.1 MINUTES OF ECONOMIC AND SMART COMMUNITIES STRATEGIC REFERENCE GROUP MEETING HELD 30 MARCH 2022

RECOMMENDATION

That the minutes of the Economic and Smart Communities Strategic Reference Group meeting held 30 March 2022, copies of which were previously circulated to all members, be confirmed as a true and correct record of the proceedings of that meeting.

5.0 UPDATE ON ACTIONS FROM LAST MEETING

ITEM 5.1	**ACTION LOG UPDATE - KATH MCKENZIE - 5 MINS**
REPORTING OFFICER	
TRIM FILE REF	**2022/313855**
ATTACHMENTS	**NIL**

EXECUTIVE SUMMARY

PURPOSE

To report the updates on action items of the Economic and Smart Communities Strategic Reference Group.

ITEM NO.	ACTION	UPDATE
6.2	That members provide written feedback on working draft of the Economic Development Strategy to kath.mckenzie@northernbeaches.nsw.gov.au by 29 April 2022.	SRG members were invited to provided feedback on the draft Economic Development Strategy. To date no feedback was given by members.
6.3	Provide an update on the Shared Spaces trial at Dee Why	An update on the Dee Why Streets as Shared Spaces trial will be given at the meeting on 1 June by the Strategic Transport team, as part of wider discussion on evaluating economic impact of events/public domain improvements.
7.0	Update on the status of the Smart Beaches and Smart Parking initiatives next SRG meeting	An update on the Smart Beaches pilot will be given at the meeting on 1 June by Tony Blunden from Lake Macquarie Council. The tender for the Smart Parking initiative has not yet been awarded so cannot give an update though the SRG has been previously briefed on this project.

RECOMMENDATION

That the members of the Economic and Smart Communities Strategic Reference Group receive and note the updates and outstanding items of the Action Log.

6.0 AGENDA ITEMS

ITEM 6.1	**SMART BEACHES PILOT TRIAL UPDATE - CLINTON ROSE - 60 MINS**
REPORTING OFFICER	**MANAGER, BEACH SAFETY**
TRIM FILE REF	**2022/288711**
ATTACHMENTS	**NIL**

ISSUE

At the last meeting of the Economic and Smart Communities Strategic Reference Group in March 2022 it was requested that the group be provided with an update on the outcomes of the SMART BEACHES pilot that was developed in partnership with Lake Macquarie Council.

DISCUSSION

Tony Blunden, Coordinator Business Support Lake Macquarie Council, along with Clinton Rose Manager, Beaches Safety Northern Beaches Council, will provide a presentation on the SMART BEACHES project delivered in partnership between the two councils.

Tony will be presenting on the data collected by SMART BEACHES, it's impact on operational risk-based decision making and the future of SMART BEACHES.

RECOMMENDATION OF MANAGER, BEACH SAFETY

That:

1. Members of Economic & Smart Communities Strategic Reference Group

    A. Note the update on the SMART BEACHES pilot.

ITEM 6.2	**THE STRAND DEE WHY - STREETS AS SHARED SPACES TRIAL FEEDBACK - MICHELLE CARTER - 30 MINS**
REPORTING OFFICER	**STRATEGIC TRANSPORT OFFICER**
TRIM FILE REF	**2022/283097**
ATTACHMENTS	**1 ⇩The Strand Dee Why - Human Movement Data and Traffic Analysis**

ISSUE

To report back the Economic and Smart Communities Strategic Reference Group (SRG) on the Streets as Shared Spaces (SaSS) trial project along The Strand, Dee Why, including the broad range of data and community feedback collected. Discuss ways to capture data on outcomes during the trial, which has now been extended for a further 12 months, to inform future evaluations of initiatives to support centres.

BACKGROUND

Council, at its meeting in May 2021, adopted a trial to allow the implementation of a northbound one-way traffic flow and two way separated cycleway, with the addition of a boardwalk footway and other measures to enhance the amenity along the beachfront restaurant precinct at The Strand, Dee Why. The trial has operated since the completion of works in August 2021.

In assessing the trial against the outcomes of supporting business, enhancing pedestrian activity and access, and prioritising space for people, it is largely considered to have been successful. Overall, the feedback from both businesses and the community was positive, however, there were divided opinions regarding the traffic and parking arrangements. The trial resulted in reduced vehicle traffic, as well as improved pedestrian and visitor experiences. Restaurants were able to expand their outdoor dining areas whilst providing additional space on the boardwalk area for pedestrians and areas for consumption of take away meals.

Given the feedback regarding the improvements in The Strand, it was recommended at the April 2022 Council Meeting that council should investigate options to progress improvements, including funding, and in consultation with the community consider solutions to address the negative impacts associated with traffic flow.

The reallocation of traffic routes to the adjoining road corridors, mainly Clyde Road, Oaks Avenue, Pacific Parade and Avon Road was one of the key concerns raised along with the increased traffic affecting pedestrian safety at the key intersection of the roads listed above.

Outlined below are some of the key findings from evaluating the benefits and impacts of the trial. This includes data on Human Mobility Data and Traffic Analysis collated by Urbis as part of the trial evaluation (see attached full report).

Key Findings - Traffic

Speed and volume data sets were collected regularly during the trial to determine what impact traffic was having in the local area and whether there were any measures that could be undertaken to mitigate this impact on an ongoing basis. Traffic counts taken during the trial at regular intervals have been compared against the pre-trial counts to determine the effect on traffic volumes, distribution and speeds.

- Vehicle usage along The Strand has dropped with the one-way conversion.
- Higher vehicle volumes were observed in nearby streets on Clyde Road, Avon Road, Oaks Ave and Pacific Parade as vehicles diverted away from The Strand.

- Decreased vehicle volumes on Dee Why's local roads are consistent with the heightened COVID-19 restrictions experienced in the second half of 2021.

Key Findings – Visitation

Human movement data surveys were also undertaken to determine whether the location was acting as a destination for local residents or was attracting people from further afield. This has been used to gauge whether the trial was improving business by attracting visitors from outside of the area. This analysis found that:

- The one-way conversion has a minimal impact on the draw of visitors to The Strand.
- Most visitors to The Strand live within the Northern Beaches Local Government Area (LGA).
- The one-way conversion has resulted in an increase in pedestrian visitation to The Strand.
- Most visitors were observed to be travelling home after their visit to The Strand.

Business Feedback

There are 30 business premises located on The Strand and its immediate surrounds. All businesses have been engaged with throughout the process. There are currently 3 vacant spaces.

A business survey has been available to all businesses throughout the trail with reminders to complete being given out through January and February 2022. Businesses were encouraged to complete the survey and provide feedback to Council throughout the trial to capture changing opinions.

- Council received 9 responses to the online survey and 9 responses conducting the surveys face to face (representing 55.6% of operating businesses)
- 14 of the business responses are from food and beverage operators

Overall businesses reported positive interactions and comments from their customers with the increased space for customer waiting and outdoor dining being the biggest positive. The traffic and parking changes were the elements that some businesses reported less positive comments from their customers. Over 75% of business comments were supportive of the trial and the benefits that the trial has provided.

Community Feedback

An online survey was available to the public between 15th August 2021 and 7th February 2022. During this time the survey was viewed 1,512 times, and we received 773 complete and 152 incomplete responses. The survey link was provided onsite via QR code signs located through the activation area.

- 94.79% of responses came from people that visited the Strand at least once a week with 52.93% of respondent being daily visitors.
- 580 (76%) of respondents listed the 2099 postcode as home.
- Of the 37% of respondents that felt the changes had negatively affected their experience 84% were unhappy with the changed traffic and parking conditions. Their comments related to traffic flow on the Strand and surrounding streets.

- 62% of respondents liked the trial and reported that it enhanced their Strand experience, with 30% of those respondents attributing the improvement to the changed traffic and parking conditions, but 45% also praised the increased pedestrian space that resulted.

Along with the traffic concerns raised, the ongoing desire for the increase in on-street parking for the benefit of residents in the surrounding streets. There was also strong support from the community for a full closure. However, this was not supported by the businesses that rely on passing trade.

Pedestrian safety was also a key issue with several issues raised regarding the walkability of the overall Dee Why area and the need for additional safe pedestrian crossings at key intersections in the high-density area of Dee Why. Three key locations were considered initially, and proposals approved at the March meeting of the Northern Beaches Local Traffic Committee.

Additional investigation of other locations that have been raised by the community during the trial is currently underway with options being prepared for the future works program to assist in improving the overall walkability of Dee Why.

As part of the initial traffic modelling work undertaken, various future road network layouts in the Dee Why area were modelled. Staff have looked at providing a clearly defined one-way road network that allowed for additional parking, and to further reduce the traffic conflict and rat running, provided additional active transport options to enhance connectivity between the town centre and the beachfront.

DISCUSSION

At the April 2022 Council Meeting it was agreed that Council would extend the implementation of the trial for a further 12 months to allow for the ongoing use of the areas by the community with the view to formalising the installation. It was also agreed that staff would commence the design and consultation on parking and access improvements to address the issues that have been raised during the trial to benefit residents and visitors to Dee Why Beach.

Using the Streets as Shared Space project at The Strand – Dee Why trial as an example, members of the Economic & Smart Communities SRG can discuss how council can use data to evaluate the impacts and benefits of running activations and public domain improvements. This will help inform current and future impact assessments of initiatives to revitalise centres, including PLAY MANLY.

RECOMMENDATION OF STRATEGIC TRANSPORT OFFICER

That:

1. Members of the Economic and Smart Communities SRG:
   A. Note the feedback on The Strand Dee Why – Streets as Shared Spaces Trial.
   B. Participate in a discussion on how council can use data to evaluate the impacts and benefits of initiatives to revitalise centres.

URBIS

THE STRAND, DEE WHY

HMD and Traffic Study

Prepared for Northern Beaches Council
January 2022

COVID-19 AND THE POTENTIAL IMPACT ON DATA INFORMATION

The data and information that informs and supports our opinions, estimates, surveys, forecasts, projections, conclusion, judgments, assumptions and recommendations contained in this report (Report Content) are predominantly generated over long periods, and is reflective of the circumstances applying in the past. Significant economic, health and other local and world events can, however, take a period of time for the market to absorb and to be reflected in such data and information. In many instances a change in market thinking and actual market conditions as at the date of this report may not be reflected in the data and information used to support the Report Content.

The recent international outbreak of the Novel Coronavirus (COVID-19), which the World Health Organisation declared a global health emergency in January 2020 and pandemic on 11 March 2020, has and continues to cause considerable business uncertainty which in turn materially impacts market conditions and the Australian and world economies more broadly.

The uncertainty has and is continuing to impact the Australian real estate market and business operations. The full extent of the impact on the real estate market and more broadly on the Australian economy and how long that impact will last is not known and it is not possible to accurately and definitively predict. Some business sectors, such as the retail, hotel and tourism sectors, have reported material impacts on trading performance. For example, Shopping Centre operators are reporting material reductions in foot traffic numbers, particularly in centres that ordinarily experience a high proportion of international visitors.

The data and information that informs and supports the Report Content is current as at the date of this report and (unless otherwise specifically stated in the Report) does not necessarily reflect the full impact of the COVID-19 Outbreak on the Australian economy, the asset(s) and any associated business operations to which the report relates. It is not possible to ascertain with certainty at this time how the market and the Australian economy more broadly will respond to this unprecedented event and the various programs and initiatives governments have adopted in attempting to address its impact. It is possible that the market conditions applying to the asset(s) and any associated business operations to which the report relates and the business sector to which they belong has been, and may be further, materially impacted by the COVID-19 Outbreak within a short space of time and that it will have a longer lasting impact than we have assumed. Clearly, the COVID-19 Outbreak is an important risk factor you must carefully consider when relying on the report and the Report Content.

Where we have sought to address the impact of the COVID-19 Outbreak in the Report, we have had to make estimates, assumptions, conclusions and judgements that (unless otherwise specifically stated in the Report) are not directly supported by available and reliable data and information. Any Report Content addressing the impact of the COVID-19 Outbreak on the asset(s) and any associated business operations to which the report relates or the Australian economy more broadly is (unless otherwise specifically stated in the Report) unsupported by specific and reliable data and information and must not be relied on.

To the maximum extent permitted by law, Urbis (its officers, employees and agents) expressly disclaim all liability and responsibility, whether direct or indirect, to any person (including the Instructing Party) in respect of any loss suffered or incurred as a result of the COVID-19 Outbreak materially impacting the Report Content, but only to the extent that such impact is not reflected in the data and information used to support the Report Content.

This report is dated **January 2022** and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (Urbis) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of **Northern Beaches Council** (Instructing Party) for the purpose of a **Human Movement Data and Traffic Study** (Purpose) and not for any other purpose or use. Urbis expressly disclaims any liability to the Instructing Party who relies or purports to rely on this report for any purpose other than the Purpose and to any party other than the Instructing Party who relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events including wars, civil unrest, economic disruption, financial market disruption, business cycles, industrial disputes, labour difficulties, political action and changes of government or law, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or made in relation to or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

Urbis has made all reasonable inquiries that it believes is necessary in preparing this report but it cannot be certain that all information material to the preparation of this report has been provided to it as there may be information that is not publicly available at the time of its inquiry.

In preparing this report, Urbis may rely on or refer to documents in a language other than English which Urbis will procure the translation of into English. Urbis is not responsible for the accuracy or completeness of such translations and to the extent that the inaccurate or incomplete translation of any document results in any statement or opinion made in this report being inaccurate or incomplete, Urbis expressly disclaims any liability for that inaccuracy or incompleteness.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the belief on reasonable grounds that such statements and opinions are correct and not misleading bearing in mind the necessary limitations noted in the previous paragraphs. Further, no responsibility is accepted by Urbis or any of its officers or employees for any errors, including errors in data which is either supplied by the Instructing Party, supplied by a third party to Urbis, or which Urbis is required to estimate, or omissions howsoever arising in the preparation of this report, provided that this will not absolve Urbis from liability arising from an opinion expressed recklessly or in bad faith.

Urbis staff responsible for this report were:

Director	Graham McCabe, Princess Ventura
Associate Director	Alison Lee, Fraser Brown
Consultant	Thet Swan, Lucas Biurra-Hoy

Project code	P0037008
Report number	1

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

CONTENTS

01 BACKGROUND & METHODOLOGY

INTRODUCTION

As part of the *Streets as Spaces Program*, Northern Beaches Council has undertaken a trial change to The Strand at Dee Why to increase outdoor dining, provide a separated cycleway and reduce circulating traffic by converting The Strand to one-way northbound. The one-way activation was installed at The Strand between Oaks Avenue and Dee Why Parade from August 2021

This study seeks to identify any impacts or changes to the utilisation of the local road network, in particular on the following locations, for which traffic volume data has been provided

- The Strand (Pacific Parade – Oaks Avenue)
- Richmond Avenue.
- Dee Why Parade.
- Howard Avenue.
- Oaks Avenue.
- Pacific Parade.
- Avon Road.
- Clyde Road.

Traffic data and Human Movement Data (HMD) has been processed and analysed for additional precincts (other local roads), however, they have been excluded from the core analysis. These precincts were used to assist in cleaning the data, user type identification and refining the sample set.

Study Area Map

Source: Urbis

TRAFFIC VOLUME COUNT LOCATIONS AND SCREENLINES

Traffic data was provided by Northern Beaches Council for three reporting periods. These periods were

- 1st – 8th of February (February)
- 16th – 22nd of August (August).
- 27th of September – 3rd of October (September).

The traffic data from these counters were used in conjunction with the Human Movement Data (HMD) to determine changes in vehicle trip behaviours on the streets of Dee Why before and after the implementation of one-way northbound traffic conditions along The Stand in Dee Why.

The map on the right illustrates the location of the inter-block traffic counters and the period for which data was available from each counter. It also shows the screenlines used for analysis (a screenline enables comparison across a collection of roads to show network-wide changes by direction).

The comparison of traffic volumes was only able to be completed using counters that include February and either August or September.

Inter-block Traffic Volume Counter Locations and Screenlines

Source: Urbis

HMD METHODOLOGY

Methodology

The Human Movement Data has been sourced from the third-party provider Near. Near's mobile location data is aggregated from a variety of high-quality sources, including data from proprietary apps and locational data derived from mobile advertising. Across Australia, the dataset has approximately 6.1 million active unique devices per month. Consequently, the dataset is seen as accurate for this report.

These apps are predominantly English-speaking apps and will have varying levels of penetration across different user groups. Some user groups, for example, Chinese residents, could potentially have lower penetration rates. There are limitations with specific countries when assessing international visitors, for example, penetration across China is limited due to strict privacy laws.

The mobile phone data assessment includes the following constraints

- Data has been analysed over four different periods.
  - Period 1 (February 2021) - pre-lockdown and pre-implementation.
  - Period 2 (July 2021) - lockdown and pre-implementation.
  - Period 3 (September 2021) - lockdown and post-implementation.
  - Period 4 (November 2021) - post-lockdown and post-implementation.
- The resident and worker locations of each mobile phone are derived from the device's common evening and common daytime location, respectively.
- The Common Evening Location (CEL) for a device is estimated by determining where a device most frequently appears during the "non-work" hours (evening through morning and weekends). The overnight hours are defined as after 6 pm and before 8 am.
- The Common Daytime Location (CDL) for a device is estimated by determining where a device most frequently appears during the "work hours (daytime on weekdays. The hours are defined as after 8 am and before 6 pm from Monday through Friday.
- The data sample is highlighted in the charts opposite, which outline the number of visits to the precincts.

Assumptions

Devices can be attributed to both people walking throughout the area, as well as cycling and driving.

Given vehicles are the most impacted by the one-way conversion, device identification associated with vehicles used a number of methodologies, including

- If a device was observed to have travelled between Pittwater Road and The Strand within 15 minutes or between Griffin Road and The Strand within 10 minutes, said device was identified as a car.
- Analysis of journey path and utilisation of surrounding road network.
- All trips of particular device are identified as vehicles if more than 50 per cent of their trips to The Strand have been identified as vehicles.
- Exceptions have been made to identify pedestrians from the sample by looking at local residents who live within 15 mins walking distance from The Strand as these visitors are more likely to walk than drive to the precinct. The following exceptions are made for local residents.
- If a local resident's device travelled between Pittwater Road and The Strand within 10 mins, then this is a vehicle trip.
- If a local resident's devices takes longer than 10 minutes to move between Pittwater Road and The Strand then they are identified as pedestrian trips.
- All other local resident trips to The Strand are considered to be pedestrian trips.

02

TRAFFIC & HUMAN MOVEMENT DATA ANALYSIS

TRAFFIC VOLUME SUMMARY

Key Findings

The table on the right outlines the summary of traffic counters in the local road network and The Strand. The traffic volume data is for the week starting the following dates

- 1st of February 2021.
- 16th of August 2021.
- 27th of September 2021.

The *Streets as Shared Spaces* project was implemented in August 2021 with shared space being installed over late August and early September.

The traffic volume data not only shows a general decrease as a result of lockdowns but also outlines the effect of the one-way conversion.

Between February and August, all roads except Clyde had reduced volumes. Clyde Road between Oaks Avenue and Dee Why Parade saw increases of over 200 per cent in weekly volumes during this period.

Between August and September, most roads saw an uptick in visitation, with Clyde Road (all sections) and Avon Road Between Dee Why Parade and Richmond Avenue being the only streets to experience a decline in usage.

Between February and September Clyde Road still saw weekly increases of over 100 per cent between Dee Why Road and Oaks Avenue while all segments of Avon Road returned to near February volumes except Between Dee Why Parade and Richmond Avenue

Traffic Volume (Weekly)

	WEEKLY TOTAL VOLUMES			CHANGE (%)		
TRAFFIC COUNTER LOCATIONS	FEB 2021	AUG 2021	SEP 2021	FEB - AUG	AUG - SEP	FEB - SEP
The Strand (Oaks & Howard)	74,927	18,819	28,119	-75%	+49%	-62%
The Strand (Howard & Dee Why)	-	17,367	21,712	-	+25%	-
Dee Why Pde (The Strand & Clyde)	63,029	36,517	43,027	-42%	+18%	-32%
Dee Why Pde (Clyde & Avon)	69,627	42,988	48,594	-38%	+13%	-30%
Howard Ave (Clyde & Avon)	25,493	16,631	18,360	-35%	+10%	-28%
Howard Ave (The Strand & Clyde)	23,003	11,635	15,086	-49%	+30%	-34%
Avon Rd (Oaks & Howard)	59,339	55,817	61,053	-6%	+9%	+3%
Avon Rd (Howard & Dee Why)	52,217	41,561	51,199	-20%	+23%	-2%
Avon Rd (Dee Why & Richmond)	14,101	11,774	11,392	-17%	-3%	-19%
Pacific Pde (The Strand & Cassia)	55,215	50,645	58,901	-8%	+16%	+7%
Clyde Rd (Oaks & Howard)	6,840	21,296	14,060	+211%	-34%	+106%
Clyde Rd (Howard & Dee Why)	4,997	17,280	11,745	+246%	-32%	+135%
Clyde Rd (Dee Why & Richmond)	10,269	7,103	6,434	-31%	-9%	-37%

Source: Northern Beaches Council

WEATHER DURING TRAFFIC COUNTING WEEK

Key Findings

The impact of weather on the traffic along Dee Why roads were also during the analysis.

The charts on the right show the traffic volume picked up by the traffic counters along Clyde Road and The Strand against the weather for the study period.

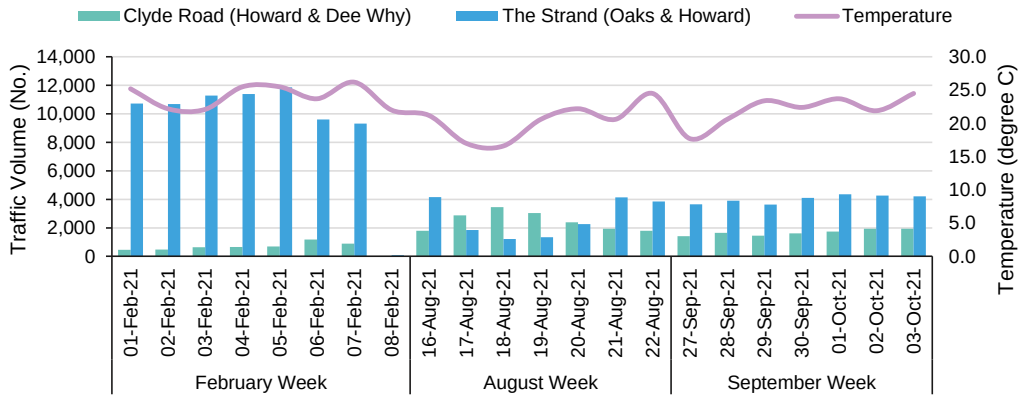
The Temperature and Rainfall statistics have been sourced from the Australian Government Bureau of Meteorology. Temperature was measured at Terry Hills while rainfall was measured at Collaroy, being the closest stations to Dee Why.

The charts show that the weather has little to no impact on the traffic on the roads in Dee Why.

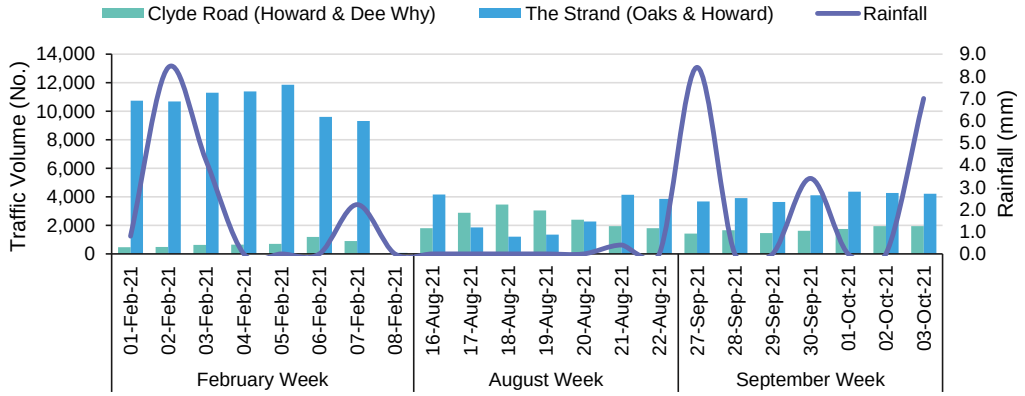
The drop in the traffic volume in August and September can mainly be the result of lockdown and one-way conversion along The Strand.

Weather has little to no impact on the change in visitation over the traffic study periods.

Traffic Volume vs Temperature



Traffic Volume vs Rainfall



Source: Australian Government Bureau of Meteorology; Northern Beaches Council; Urbis

UNADJUSTED VEHICLE VOLUME COMPARISON

Key Findings

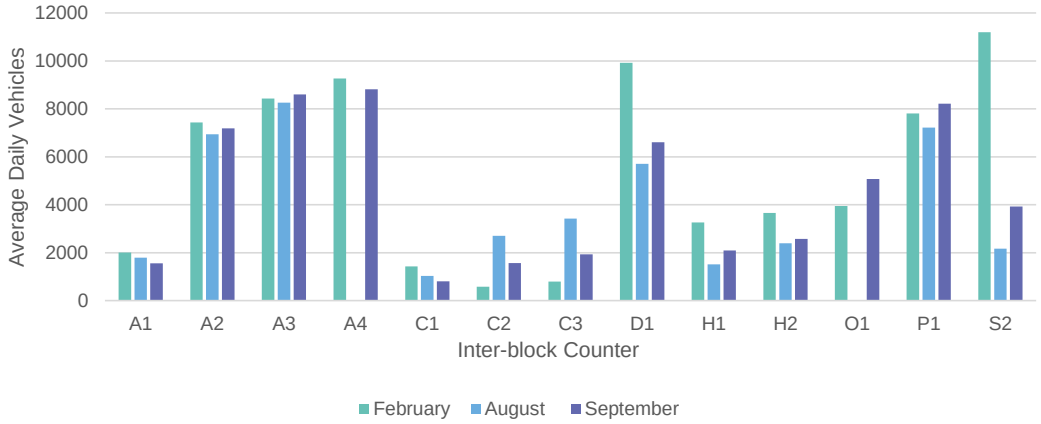
Covid has impacted the number of vehicles driving around Dee Why with drops in the number of recorded vehicles at most inter-block counter locations in both August and September. Results from the HMD analysis indicate similar Covid related downturns.

Despite the impacts of Covid, the changed traffic conditions along The Strand did have an impact on certain routes drivers would take. Vehicle movements along The Strand, represented by inter-block counter S1 significantly dropped (all other inter-block counters are shown in brackets). However Avon Road (A1-A4) returned to February volumes on both weekdays and weekends, while Clyde Road (C1-C3) exceeded February volumes. This suggests that more people are using these roads in place of The Strand as a north-south connection in Dee Why given the similarity to Februarys “Covid free” volumes. Pacific Parade (P1) and Oaks Avenue (O1) also experienced a noticeable increase as vehicles re-rerouted from The Strand to an alternative route.

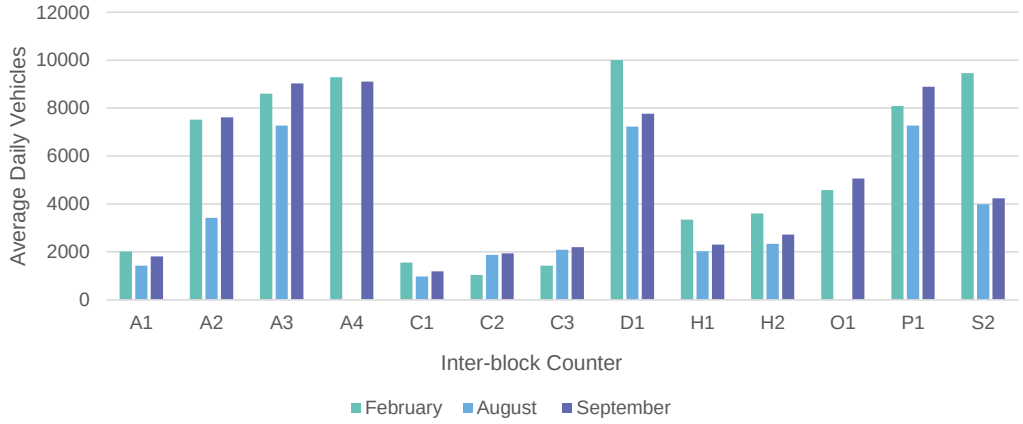
Observations across all the screenlines found in **Appendix B** indicate a significant drop in vehicle trips during the afternoon peak in September, shifting to the middle of the day, particularly on weekdays. This could suggest a Covid related behaviour change.

The changed traffic conditions along The Strand results in Avon Road and Clyde Road absorbing The Strands North-South Traffic

Weekday Average Daily Vehicles at Inter-Block Counter Locations



Weekend Average Daily Vehicles at Inter-Block Counter Locations



JOURNEY PATH – IMPACT OF ONE WAY ROAD

Key Findings

The tables on the right show the changes in the share of vehicles to the row precincts that also used the column precincts. This represents the change in local road network usage pattern as a result of installing the one-way conversion at The Strand.

The table at the top shows the impact of one-way conversion during lockdown, comparing period 2 and period 3 while table at the bottom shows the impact outside of lockdown, comparing Period 1 and 4.

In both cases, The Strand between Dee Why Parade and Oaks Avenue experienced a drop in usage from vehicles travelling via local road network.

On the other hand, Oaks Avenue and Avon Road experienced an increase in usage. This can be the result of vehicles taking alternative routes as they were unable to travel south along The Strand.

Cross usage between Clyde Road and Oaks Avenue and Howard Avenue, as well as Avon Road and Pacific Parade, has increased significantly as a result of the implementation.

Impact of one-way during lockdown (P2-P3)

Those Who Used ... / Also Used...	Richmond Ave	Dee Why Pde	Howard Ave	Oaks Ave	Pacific Pde	Avon Rd	Clyde Rd	The Strand (Dee Why & Oaks)	The Strand (Oaks & Pacific)
Richmond Ave		-11.4%	-1.6%	7.9%	4.5%	9.1%	2.0%	-18.7%	-3.3%
Dee Why Pde	-3.9%		0.9%	7.0%	9.1%	14.0%	5.5%	-14.3%	-4.5%
Howard Ave	-1.1%	1.2%		7.6%	4.8%	6.1%	5.1%	-9.7%	-0.9%
Oaks Ave	-0.8%	4.1%	-0.6%		0.2%	4.0%	8.1%	-7.1%	5.8%
Pacific Pde	-1.1%	5.2%	-0.5%	-0.3%		11.0%	0.6%	-5.5%	1.8%
Avon Rd	-3.1%	8.1%	-6.6%	-1.9%	5.9%		-0.9%	-3.8%	3.4%
Clyde Rd	-30.7%	17.0%	9.5%	28.9%	-2.4%	-5.0%		-25.7%	5.2%
The Strand (Dee Why & Oaks)	-3.4%	1.9%	-0.6%	4.2%	2.5%	3.7%	2.6%		6.7%
The Strand (Oaks & Pacific)	-2.3%	-3.5%	0.5%	12.3%	7.0%	7.2%	5.6%	-7.2%	

Impact of one-way outside lockdown (P1-P4)

Those Who Used ... / Also Used...	Richmond Ave	Dee Why Pde	Howard Ave	Oaks Ave	Pacific Pde	Avon Rd	Clyde Rd	The Strand (Dee Why & Oaks)	The Strand (Oaks & Pacific)
Richmond Ave		-17.2%	1.5%	6.5%	9.4%	16.0%	-4.7%	-22.4%	-3.9%
Dee Why Pde	-4.8%		1.3%	6.0%	10.5%	12.6%	3.1%	-11.9%	-6.3%
Howard Ave	-0.5%	-1.6%		8.0%	3.8%	4.2%	4.9%	-7.0%	-2.3%
Oaks Ave	-1.5%	0.0%	3.8%		-0.1%	3.0%	7.7%	-9.8%	1.8%
Pacific Pde	-1.9%	1.7%	0.5%	0.0%		9.7%	0.2%	-5.5%	-2.5%
Avon Rd	-4.0%	-2.1%	-2.2%	0.5%	7.7%		0.2%	-4.7%	-0.2%
Clyde Rd	-32.8%	2.9%	20.2%	34.2%	-1.8%	-0.3%		-44.1%	4.0%
The Strand (Dee Why & Oaks)	-5.1%	-2.3%	5.1%	2.0%	1.7%	2.2%	-0.6%		-4.1%
The Strand (Oaks & Pacific)	-3.2%	-7.2%	5.4%	10.6%	4.9%	6.0%	4.9%	-14.3%	

Source: Near; Urbis

HEATMAP ANALYSIS

Key Findings

These heatmaps illustrate the level of vehicle activity relative to its respective period in the local road network and The Strand. The maps are not comparable to one another in terms of volume but tell a clearer story about which roads vehicles are frequented after the changes.

Periods 1 and 2 (pre-implementation of one-way conversion), show little activity or usage along Clyde Road. The major routes vehicles took were via Pacific Pde, Dee Why Pde, and Avon Road.

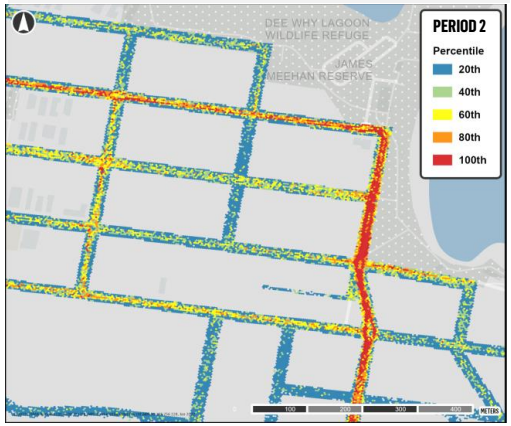
After the conversion, during Periods 3 and 4, activity along Clyde Road increased. This is consistent with the analysis of traffic counters in the area. This can also be explained by vehicles opting for alternative routes to travel south. The increase in activity was also driven by southbound buses being rerouted from The Strand to Clyde Road. There is also an increase in usage along Oaks Avenue and Avon Road.

This shows vehicles changing their travel routes in response to the one-way conversion.

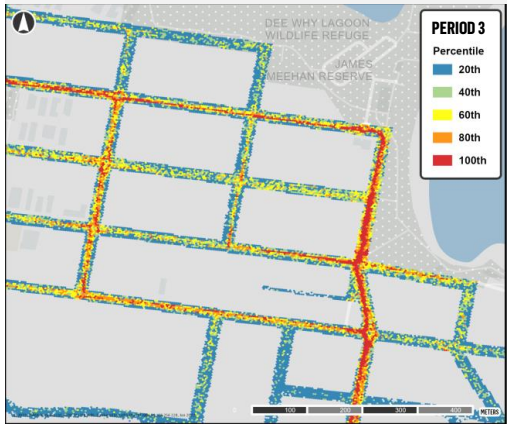
Greater levels of relative activity are observed along Clyde Road and Oaks Ave after the one-way conversion at The Strand.

Period 1 (Feb)

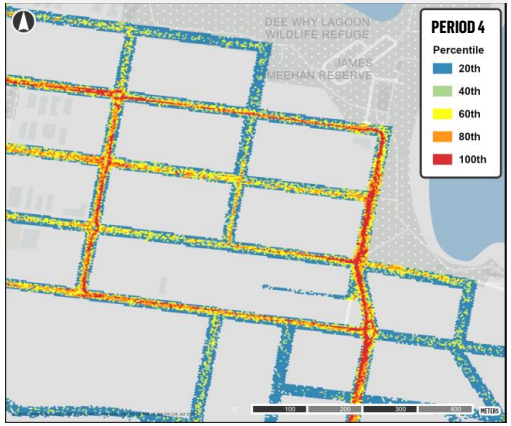
Period 2 (Jul)



Period 3 (Sep)



Period 4 (Nov)



Source: Near; Urbis

IMPACT OF HEAVY VEHICLES AS A RESULT OF CHANGED TRAFFIC CONDITIONS

Key Findings

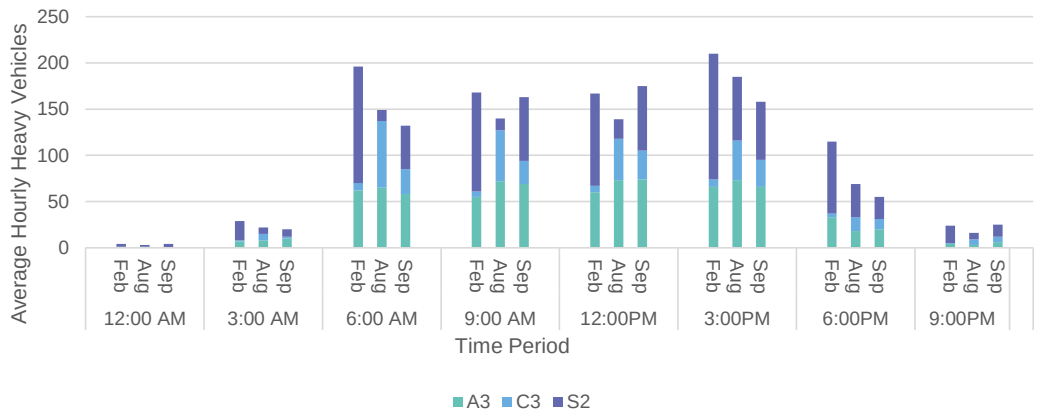
Heavy vehicle movements on Screenline C were investigated as two bus routes, the 166 and 176x, had their route paths altered by one-way conversion on The Strand. These routes now travel along Oaks Avenue and Clyde Road before accessing Howard Avenue rather than using The Strand.

The figure on the top right demonstrates weekday heavy vehicle volumes. The change in route is highlighted by the significant increases in Clyde Road's (C3) share in heavy vehicle totals in August and a decline in heavy vehicles on The Strand. A slight reduction in Heavy Vehicles using Clyde Road (C3) and an increase in heavy vehicles using Avon Road (A3) was observed in September. This likely indicates other heavy vehicle drivers better adjusting their routes to utilise the roundabouts on Avon Road as well as Avon Roads ability to completely avoid The Strand.

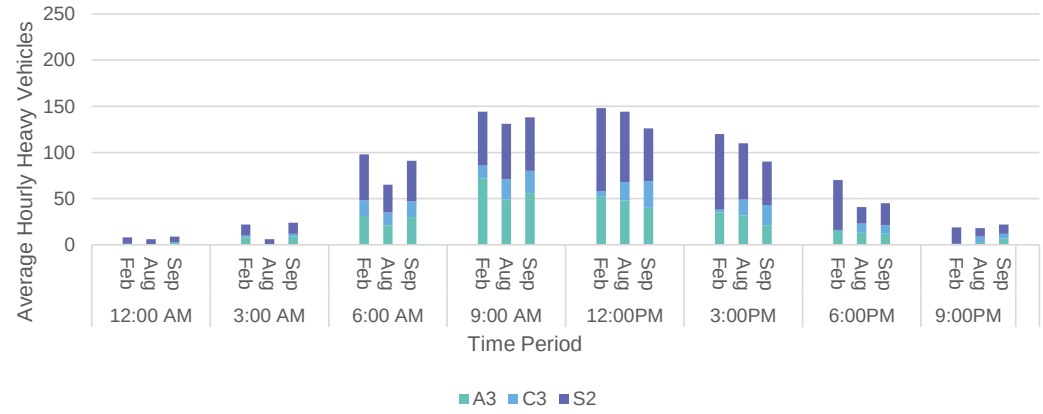
There is a less significant change in how heavy vehicles travel through Screenline C on weekends. This could be reflective of delivery vehicle hours and the fact the 176x does not run on the weekend.

Both Clyde and Avon Road are residential streets, any increase in heavy vehicle volumes on these roads would be noticeable by residents.

Screenline C – Weekday Heavy Vehicle Totals (Unadjusted)



Screenline C – Weekday Heavy Vehicle Totals (Unadjusted)



THE STRAND VISITOR DISTRIBUTION

Key Findings

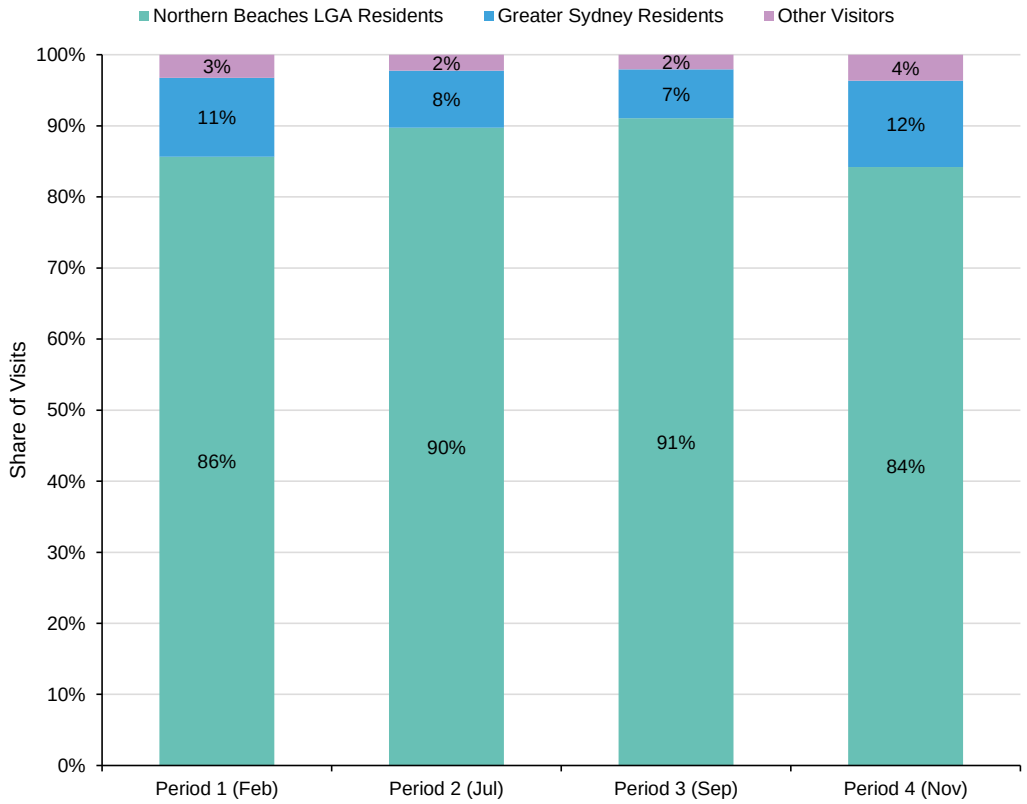
The chart on the right represents the distribution of visits to The Strand across the different periods.

The majority of visitors to The Strand are from within the Northern Beaches LGA ranging from 84 to 91 per cent of the total visits. Periods 2 and 3 experienced an increase in the share of visits from Northern Beaches LGA Residents as COVID-19 lockdown restricted visits to the local LGA. The share dropped in November, reflecting the easing of lockdown measures in October.

The one-way conversion of The Strand had little impact on the type of visitors to The Strand. The distribution is consistent with that of pre-implementation periods for both pre/post and during the lockdown.

The one-way conversion has had little impact on the draw of visitors to The Strand. Those travelling from outside the LGA are continuing to do so, with their contribution marginally higher post implementation (Period 4).

Visitor Distribution



Source: Near; Urbis

HOME LOCATION OF ALL VISITORS

Key Findings

The table on the right outlines the top 20 home locations of visitors to The Strand across the different periods.

As previously noted, visitation to The Strand is predominantly driven by residents in the Northern Beaches LGA. The top home suburbs for The Strand visitors are located in the immediate area.

Dee Why accounts for 16 to 24 per cent of visits to The Strand and Cromer accounts for 5 to 8 per cent. Periods 2 and 3 received a higher share from both suburbs as a result of the lockdown.

After the one-way conversion, the share of visitors from areas in the south of The Strand like North Curl Curl, Curl Curl and Manly dropped. The Strand received a higher share from suburbs north of Dee Why.

The Strand draws strongly from the immediate area with 22 to 31 per cent of visits coming from Dee Why and Cromer residents over the analysis period.

The draw is expanding however, with a much higher share of visitation from outside the top 20 suburbs in Period 4.

Home Location by Suburb (All Visitors)

PERIOD 1 (FEB)		PERIOD 2 (JUL)		PERIOD 3 (SEP)		PERIOD 4 (NOV)	
Dee Why	16.4%	Dee Why	20.1%	Dee Why	23.6%	Dee Why	17.9%
Cromer	5.5%	Cromer	7.6%	Cromer	7.7%	Cromer	5.4%
North Curl Curl	5.0%	Collaroy	6.2%	Freshwater	4.4%	Narraweena	4.5%
Collaroy Plateau	4.4%	Freshwater	5.4%	Collaroy	4.3%	Collaroy	4.3%
Freshwater	4.2%	North Curl Curl	5.0%	Narraweena	4.1%	Freshwater	4.0%
Collaroy	3.8%	Narraweena	4.4%	North Curl Curl	3.9%	Collaroy Plateau	3.5%
Narraweena	3.7%	Collaroy Plateau	3.9%	Frenchs Forest	3.9%	Beacon Hill	3.2%
Warriewood	3.6%	Beacon Hill	3.6%	Beacon Hill	3.4%	North Curl Curl	2.7%
Beacon Hill	2.7%	Allambie Heights	2.7%	Collaroy Plateau	3.2%	Frenchs Forest	2.7%
Manly	2.7%	Wheeler Heights	2.5%	Belrose	2.6%	Warriewood	2.6%
Frenchs Forest	2.6%	Mona Vale	2.5%	Allambie Heights	2.4%	Mona Vale	2.5%
Curl Curl	2.5%	Manly	2.4%	Narrabeen	2.3%	Wheeler Heights	2.0%
Wheeler Heights	2.4%	Frenchs Forest	2.2%	Wheeler Heights	2.1%	Curl Curl	1.9%
Mona Vale	2.3%	North Manly	1.9%	Warriewood	2.0%	Newport	1.8%
North Narrabeen	2.2%	Warriewood	1.7%	Manly	1.9%	Allambie Heights	1.7%
Narrabeen	2.0%	Curl Curl	1.7%	Mona Vale	1.8%	Narrabeen	1.7%
Newport	1.9%	North Narrabeen	1.5%	North Narrabeen	1.7%	Manly	1.3%
Allambie Heights	1.9%	Newport	1.4%	Newport	1.5%	North Manly	1.2%
Elanora Heights	1.8%	Brookvale	1.3%	North Manly	1.5%	Elanora Heights	1.2%
North Manly	1.4%	Narrabeen	1.2%	Curl Curl	1.4%	North Narrabeen	1.1%
Total Other Visitors	27.0%	Total Other Visitors	20.7%	Total Other Visitors	20.1%	Total Other Visitors	32.8%

Source: Near; Urbis

HOME LOCATION OF VEHICLE TRIPS

Key Findings

The charts on the right shows the distribution of home location distance and visits to The Strand by travel mode.

Majority of visitors who walked to the Strand live within the 2km radius while majority of those via vehicle live within the 10km radius. This reflects the high share of visits to The Strand from within the Northern Beaches LGA.

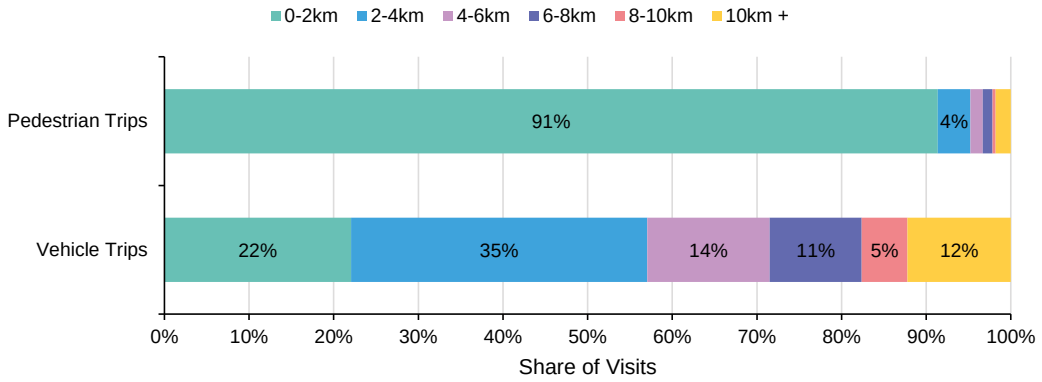
Over 80 per cent of trips to The Strand were vehicle trips in February and July. After the one-way conversion along The Strand in August, the share of visits from vehicle trips dropped to 74 and 77 per cent in September and November respectively.

The map overleaf illustrates the home location of both pedestrian and vehicle trips to The Strand.

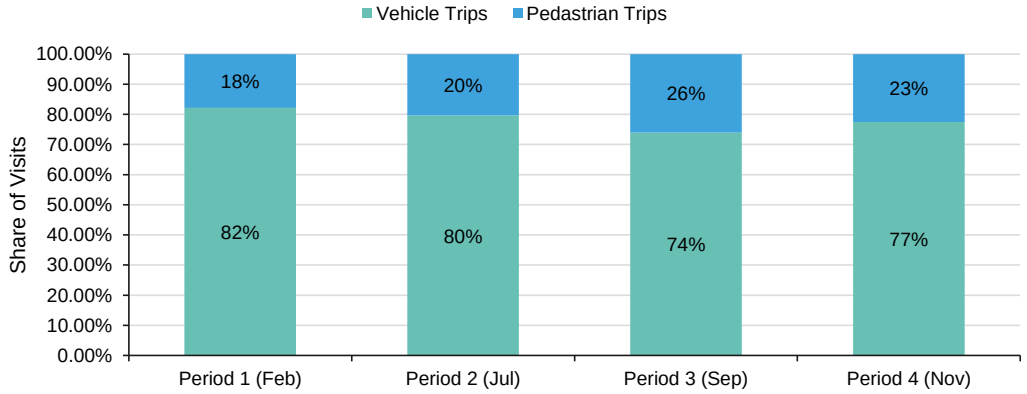
Most visitors walking to The Strand live in the neighbouring suburbs within a 2km radius.

Visitations from pedestrian has increased with implementation of one-way conversion on The Strand.

Home Location Distance from The Strand (2021)

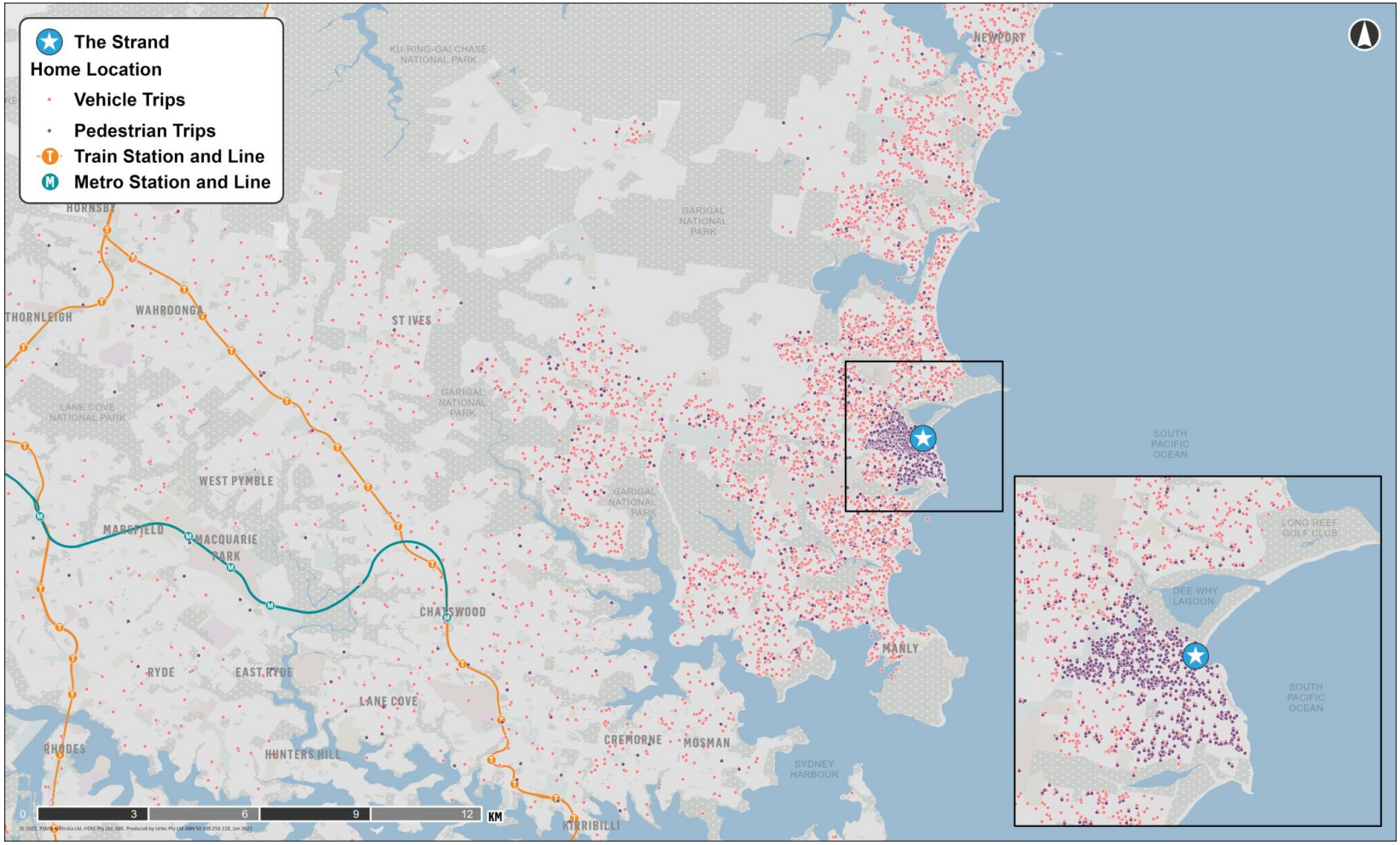


Visits Distribution by Travel Mode



Source: Near; Urbis

HOME LOCATION OF VISITORS



Note: Some devices have been attributed to both vehicle visitors and local walkers as they could drive to the area on one day and walk on another.

POST-VISIT ANALYSIS (15 MINUTES)

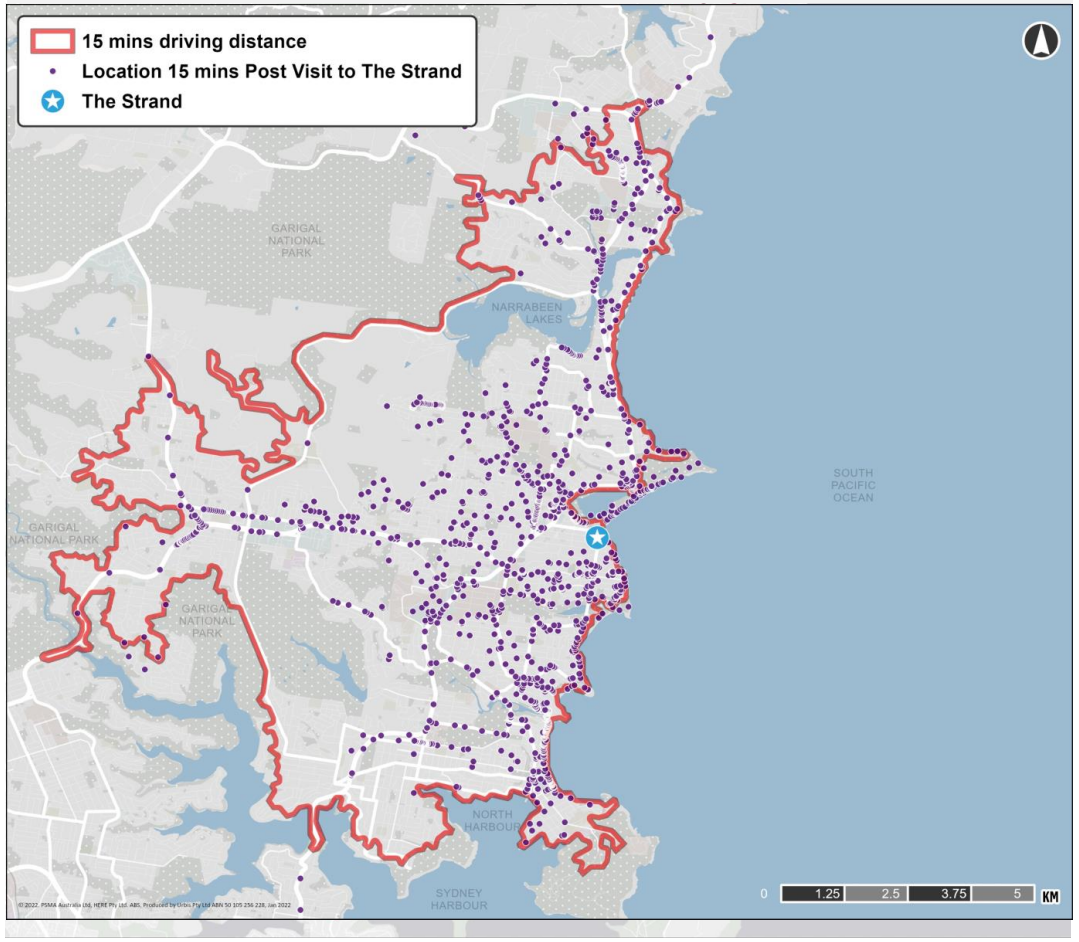
Key Findings

The map on the right shows where people were 15 minutes after being observed at The Strand (one-way conversion) precinct in 2021.

Most of the visitors are located in the residential areas that is within the 15 min driving distance from The Strand. This reflects the high share of local residents to The Strand. The majority of the visitors are located south of The Strand with some travelling east along Warringah Road.

Visitors to The Strand were observed to be travelling back home 15 minutes after visiting The Strand.

Post-Visit Analysis (15 mins)



Source: Near; Urbis

DAY OF WEEK ANALYSIS

Key Findings

The charts on the right show the visitation level across the week in the local road network and The Strand. The visitation level only accounts for visitors who were assumed to be travelling by vehicle.

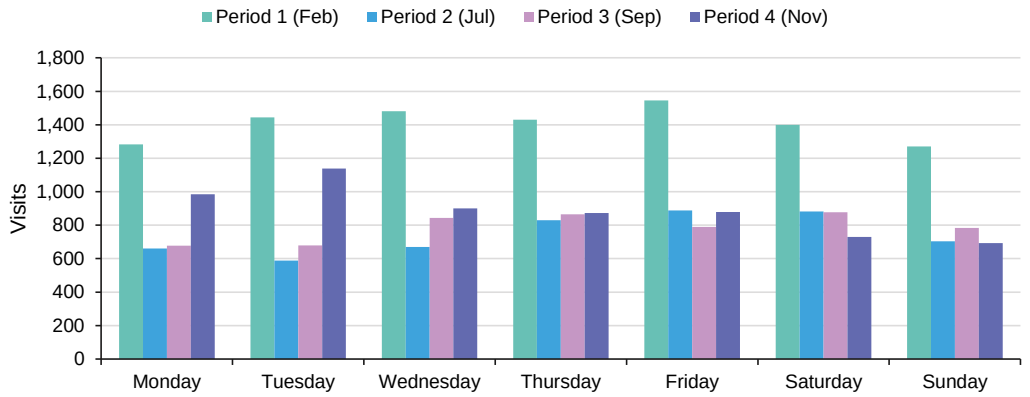
Visitation levels in Period 1 is similar across the week with slightly higher visitation towards Friday. The even distribution can be explained by both local residents travelling to work and visitors enjoying the beach.

Period 2 and 3 are observed to have greater visitation level towards the end of the week. During lockdown, working from home arranging resulted in lower distribution during the weekdays compared to the weekend.

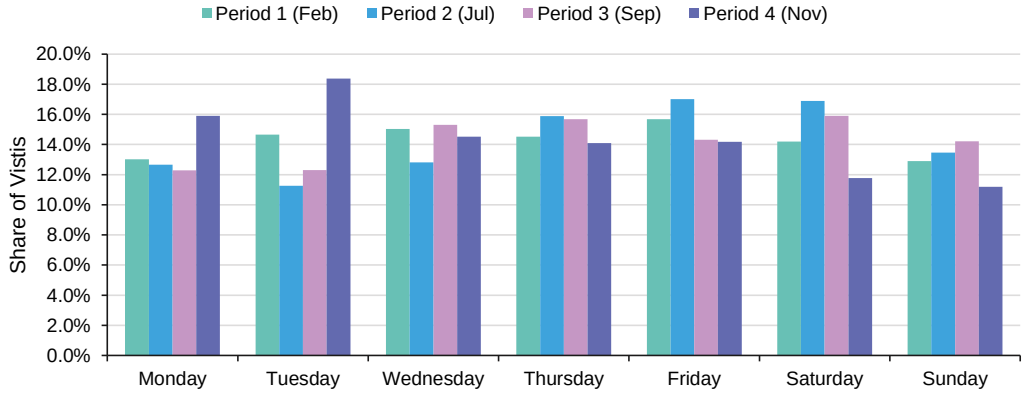
In Period 4, visitation levels were significantly higher on Monday and Tuesday. The higher share of visitation level across the weekday may represent local residents returning back to office for work.

Higher share of visitation observed on the weekdays post-implementation and post-lockdown.

Aggregate Volume by Day of Week



Share of Visits by Day of Week



Source: Near; Urbis

TIME OF DAY ANALYSIS

Key Findings

The charts on the right represent the visitation level of vehicles across the day in the local road network and The Strand.

As indicated in the previous pages, visitation volume is greater in Period 1 compared to the other time periods.

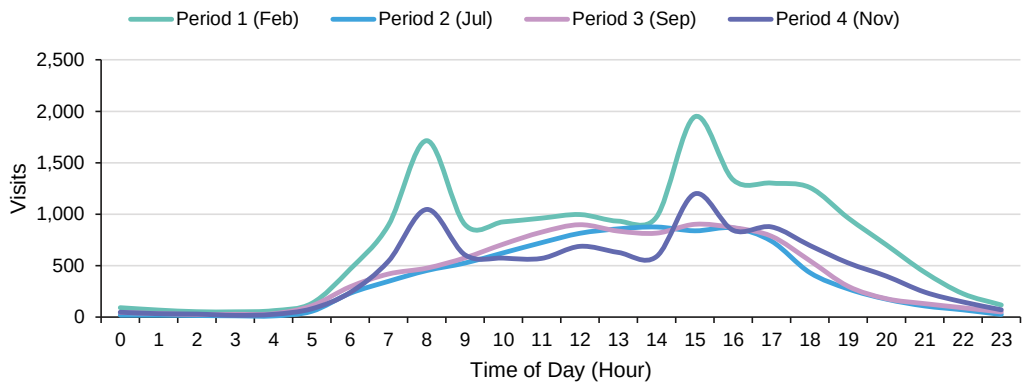
The visitation patterns for Period 1 and Period 4 are similar with obvious peaks at 8 am and 3 pm. This can be explained by visitors' travelling to and from work outside of lockdown.

This pattern is not observed in Period 2 and Period 3 as a result of the COVID-19 lockdown which commenced in June. During lockdown, local residents were more likely to make short trips to carry out daily activities such as exercise in the from lunchtime onwards.

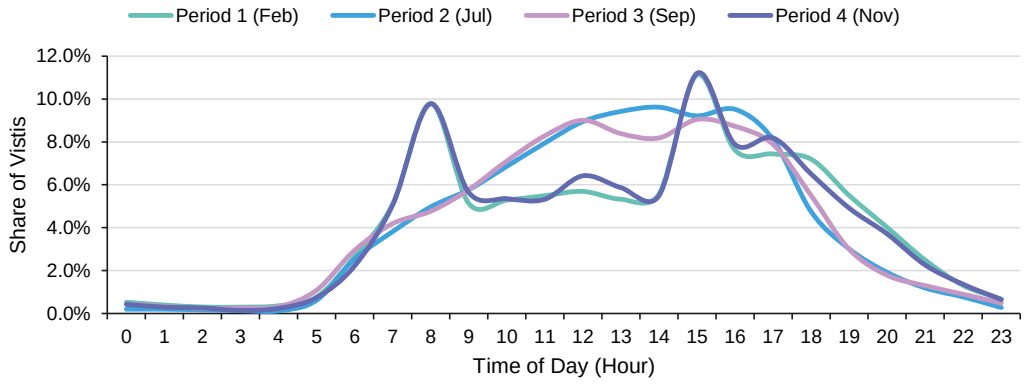
Usage volume of Dee Why roads dropped mainly due to the impact of lockdown.

Visit distribution during post-implementation periods are similar to that of pre-implementation periods across the day.

Aggregate Volume by Hour



Share of Daily Visits by Hour



Source: Near; Urbis

03

KEY FINDINGS & CONCLUSIONS

WHAT WERE THE IMPACTS OF THE CHANGED TRAFFIC CONDITIONS?

Key Findings and Conclusion

Using both HMD and traffic data, a comparative analysis of the impacts of changes in vehicle and pedestrian visitation on The Strand and surrounding streets before and after the one way northbound on The Strand was implemented found the following

- Vehicle usage along The Strand has dropped with the one-way conversion.
- Higher vehicle volumes were observed by counters on Clyde Road, Avon Road, Oaks Ave and Pacific parade as vehicles diverted away from The Strand.
- The one-way conversion has a minimal impact on the draw of visitors to The Strand.
- Most visitors to The Strand live within the Northern Beaches LGA.
- Most visitors walking to The Strand live in the neighbouring suburbs within a 2km radius of The Strand.
- The one-way conversion has resulted in an increase in pedestrian visitation to The Strand.
- Most visitors were observed to be travelling home after their visit to The Strand.
- Decreased vehicle volumes on Dee Why's local roads are consistent with the heightened Covid restrictions experienced in the second half of 2021.
- It was not possible to rectify the traffic data using HMD to demonstrate an "if Covid did not happen scenario" after the implementation of the one way on The Strand. Additional data collection is recommended.

THE STRAND VEHICLE USAGE DECREASED

OTHER LOCAL ROADS HAVE ABSORBED TRAFFIC FROM THE STRAND

PEDESTRIAN VISITATION INCREASED

MINIMAL IMPACT ON VISITOR DRAW

APPENDIX A
CROSS USAGE

JOURNEY PATH (CROSS USAGE)

Appendix Table 1 - Period 1 (Feb)

Those who used …	Also Used …								
	Richmond Ave	Dee Why Pde	Howard Ave	Oaks Ave	Pacific Pde	Avon Rd	Clyde Rd	The Strand (Dee Why & Oaks)	The Strand (Oaks & Pacific)
Richmond Ave		53.0%	5.7%	12.9%	20.5%	25.0%	20.1%	60.5%	41.0%
Dee Why Pde	8.7%		9.0%	11.4%	16.9%	19.2%	2.8%	65.6%	47.0%
Howard Ave	1.5%	14.6%		24.2%	17.8%	17.7%	2.4%	35.8%	33.5%
Oaks Ave	4.4%	23.8%	31.3%		24.2%	19.5%	3.1%	27.2%	28.3%
Pacific Pde	5.4%	27.0%	17.6%	18.5%		33.6%	1.6%	15.8%	19.0%
Avon Rd	10.8%	50.5%	29.0%	24.6%	55.7%		1.9%	14.6%	17.9%
Clyde Rd	44.4%	37.0%	19.9%	20.2%	13.4%	9.4%		71.4%	47.5%
The Strand (Dee Why & Oaks)	10.2%	67.1%	22.8%	13.4%	10.2%	5.7%	5.4%		58.8%
The Strand (Oaks & Pacific)	8.2%	57.2%	25.3%	16.5%	14.5%	8.3%	4.3%	70.0%	

Appendix Table 2 - Period 2 (Jul)

Those Who Used …	Also Used …								
	Richmond Ave	Dee Why Pde	Howard Ave	Oaks Ave	Pacific Pde	Avon Rd	Clyde Rd	The Strand (Dee Why & Oaks)	The Strand (Oaks & Pacific)
Richmond Ave		52.3%	8.9%	16.8%	14.7%	16.2%	22.5%	62.9%	35.2%
Dee Why Pde	9.2%		10.6%	13.1%	14.7%	13.6%	2.7%	69.5%	49.1%
Howard Ave	2.7%	18.3%		30.4%	18.5%	17.1%	2.6%	36.6%	30.4%
Oaks Ave	5.0%	22.2%	29.9%		26.6%	16.2%	3.7%	28.4%	27.7%
Pacific Pde	4.1%	23.3%	17.0%	24.9%		24.8%	2.1%	19.0%	18.0%
Avon Rd	9.6%	45.5%	33.3%	32.0%	52.3%		3.6%	17.3%	17.9%
Clyde Rd	51.0%	35.3%	19.1%	28.4%	16.7%	13.7%		63.2%	44.6%
The Strand (Dee Why & Oaks)	10.6%	66.5%	20.3%	16.1%	11.5%	5.0%	4.7%		55.5%
The Strand (Oaks & Pacific)	7.5%	59.1%	21.2%	19.7%	13.7%	6.4%	4.2%	69.7%	

JOURNEY PATH (CROSS USAGE)

Appendix Table 3 - Period 3 (Sep)

Those Who Used …	Also Used … Richmond Ave	Dee Why Pde	Howard Ave	Oaks Ave	Pacific Pde	Avon Rd	Clyde Rd	The Strand (Dee Why & Oaks)	The Strand (Oaks & Pacific)
Richmond Ave		40.8%	7.2%	24.7%	19.2%	25.3%	24.4%	44.2%	31.9%
Dee Why Pde	5.3%		11.5%	20.2%	23.8%	27.6%	8.3%	55.1%	44.6%
Howard Ave	1.6%	19.4%		38.0%	23.4%	23.2%	7.6%	26.9%	29.5%
Oaks Ave	4.2%	26.3%	29.3%		26.8%	20.2%	11.8%	21.3%	33.5%
Pacific Pde	3.0%	28.4%	16.5%	24.6%		35.8%	2.7%	13.5%	19.9%
Avon Rd	6.4%	53.6%	26.7%	30.1%	58.2%		2.7%	13.6%	21.3%
Clyde Rd	20.3%	52.3%	28.6%	57.4%	14.3%	8.8%		37.6%	49.8%
The Strand (Dee Why & Oaks)	7.2%	68.3%	19.7%	20.3%	14.0%	8.7%	7.3%		62.2%
The Strand (Oaks & Pacific)	5.2%	55.6%	21.7%	32.0%	20.7%	13.6%	9.8%	62.5%	

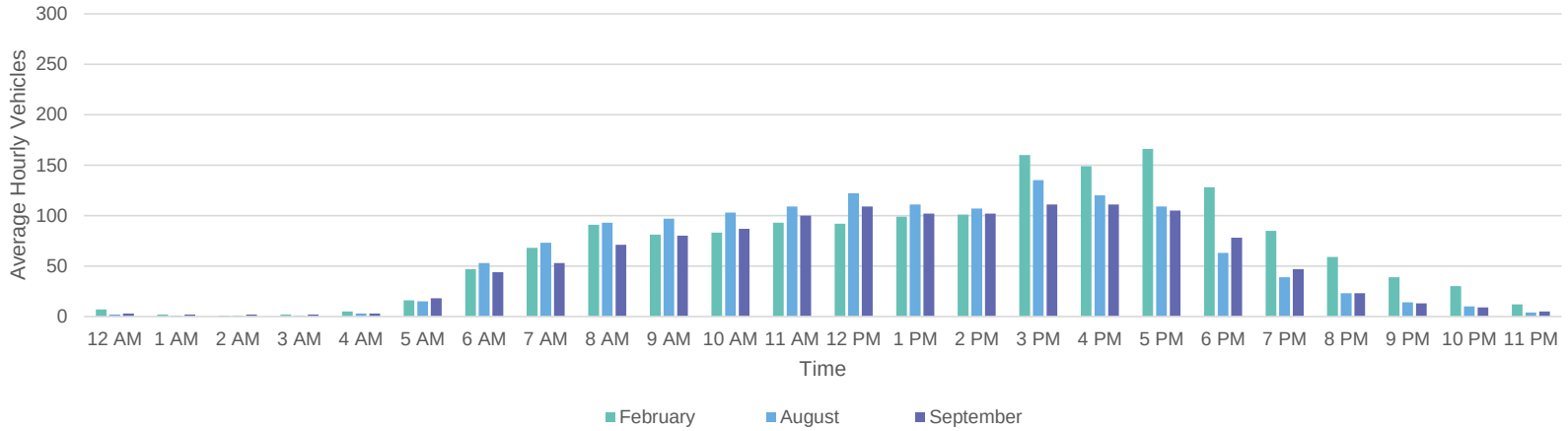
Appendix Table 4 - Period 4 (Nov)

Those Who Used …	Also Used … Richmond Ave	Dee Why Pde	Howard Ave	Oaks Ave	Pacific Pde	Avon Rd	Clyde Rd	The Strand (Dee Why & Oaks)	The Strand (Oaks & Pacific)
Richmond Ave		35.7%	7.2%	19.3%	29.8%	41.0%	15.4%	38.0%	37.0%
Dee Why Pde	3.9%		10.3%	17.5%	27.5%	31.7%	5.8%	53.7%	40.7%
Howard Ave	1.0%	12.9%		32.2%	21.6%	22.0%	7.3%	28.8%	31.2%
Oaks Ave	2.9%	23.8%	35.1%		24.1%	22.4%	10.8%	17.4%	30.1%
Pacific Pde	3.4%	28.6%	18.0%	18.4%		43.3%	1.8%	10.3%	16.4%
Avon Rd	6.9%	48.4%	26.8%	25.1%	63.4%		2.0%	9.9%	17.6%
Clyde Rd	11.6%	39.9%	40.1%	54.4%	11.6%	9.1%		27.3%	51.5%
The Strand (Dee Why & Oaks)	5.0%	64.8%	27.8%	15.4%	11.9%	7.8%	4.8%		54.7%
The Strand (Oaks & Pacific)	5.0%	50.0%	30.7%	27.2%	19.4%	14.2%	9.3%	55.7%	

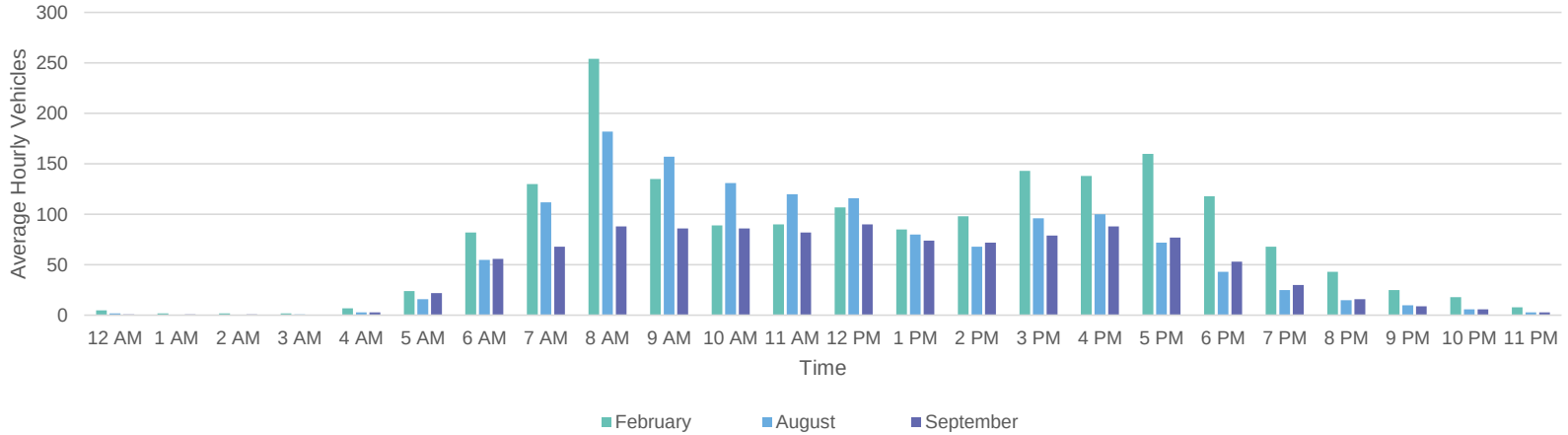
APPENDIX B
TRAFFIC COUNTS

SCREENLINE A - WEEKDAY UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 1 – Screenline A – Northbound Weekday Total Volumes (Unadjusted)

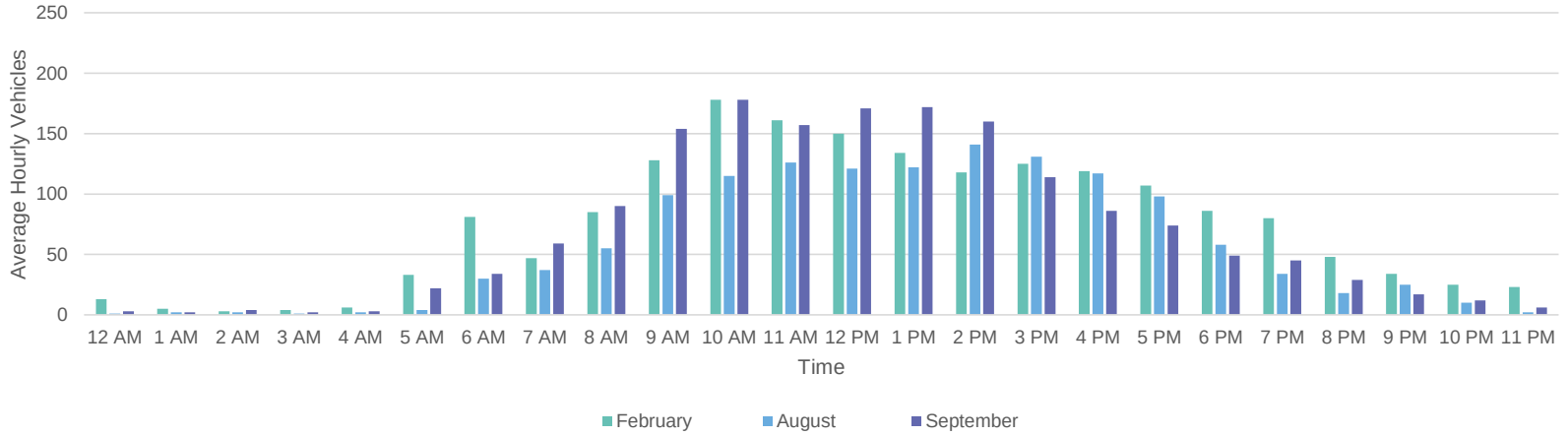


Appendix figure 2 – Screenline A – Southbound Weekday Total Volumes (Unadjusted)

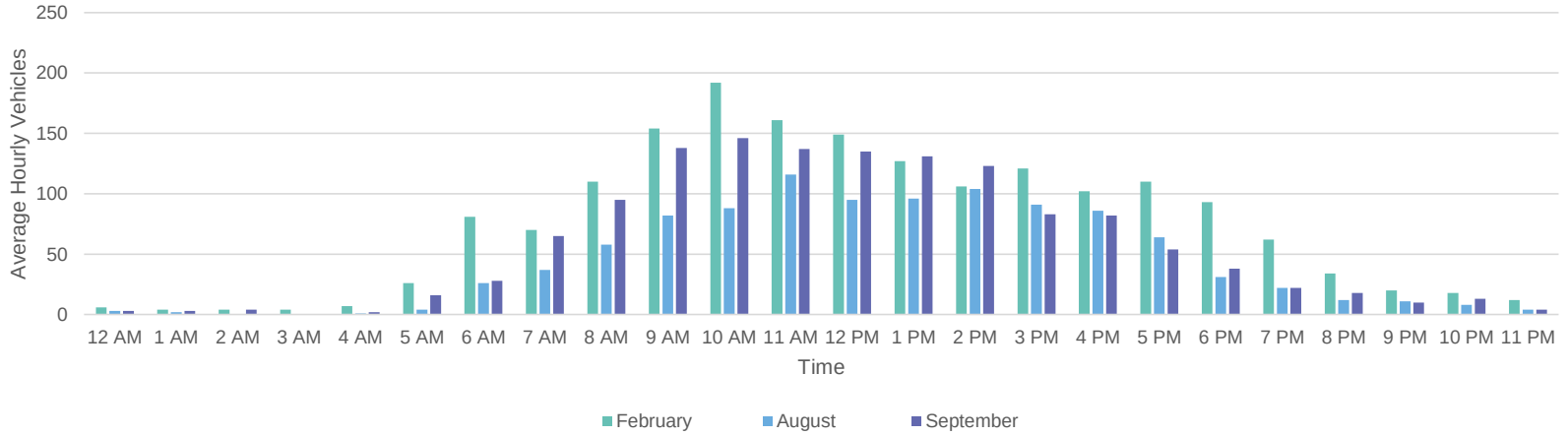


SCREENLINE A - WEEKEND UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 3 – Screenline A – Northbound Weekend Total Volumes (Unadjusted)

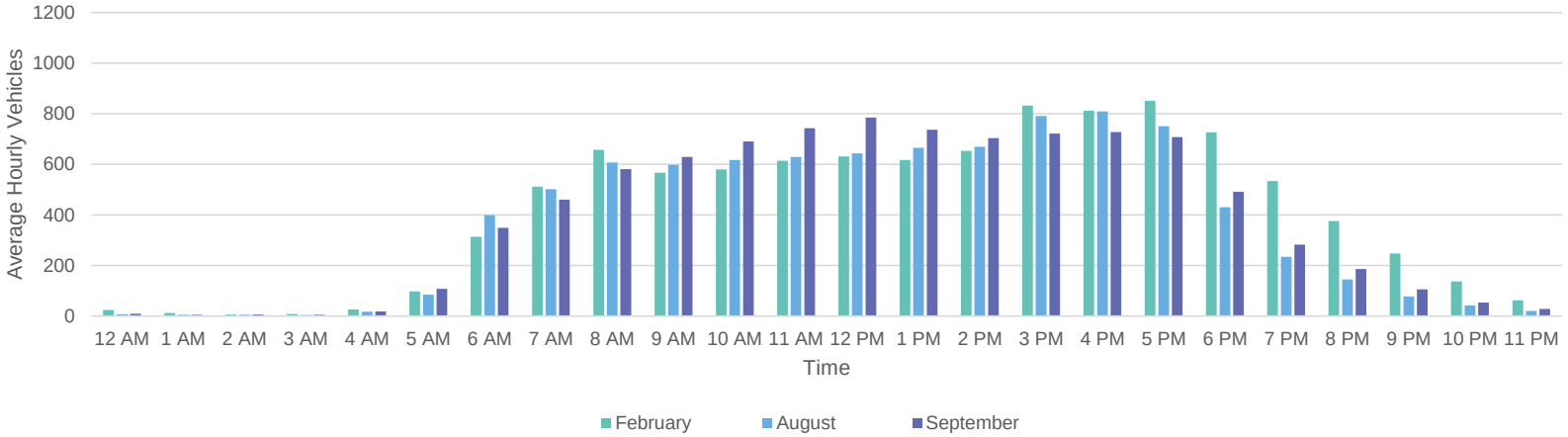


Appendix figure 4 – Screenline A – Weekend Southbound Total Volumes (Unadjusted)

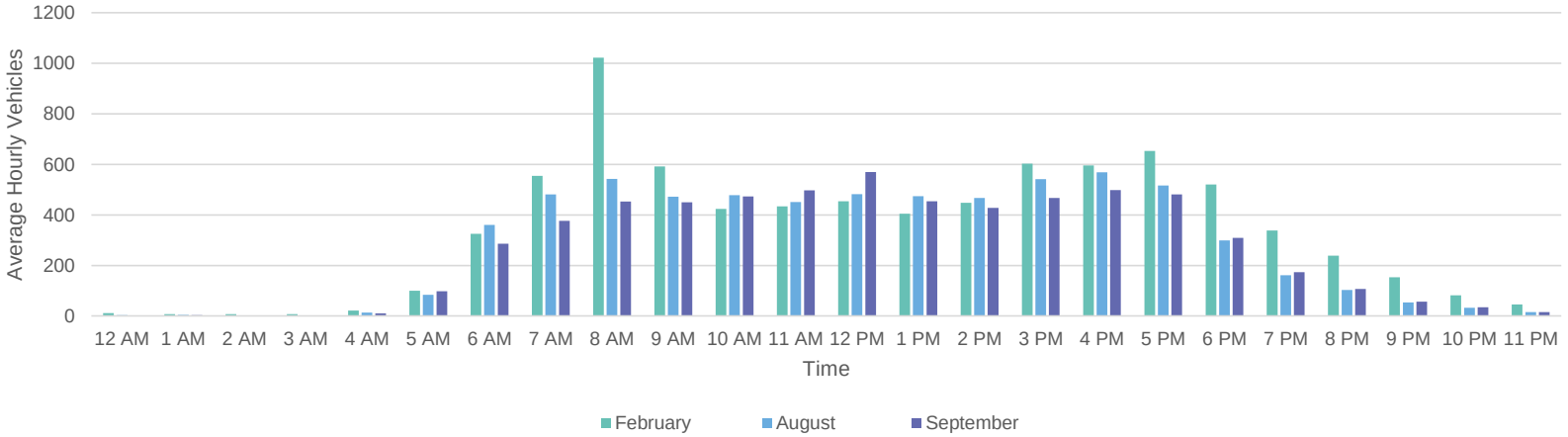


SCREENLINE B - WEEKDAY UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 5 – Screenline B – Weekday Northbound Total Volumes (Unadjusted)

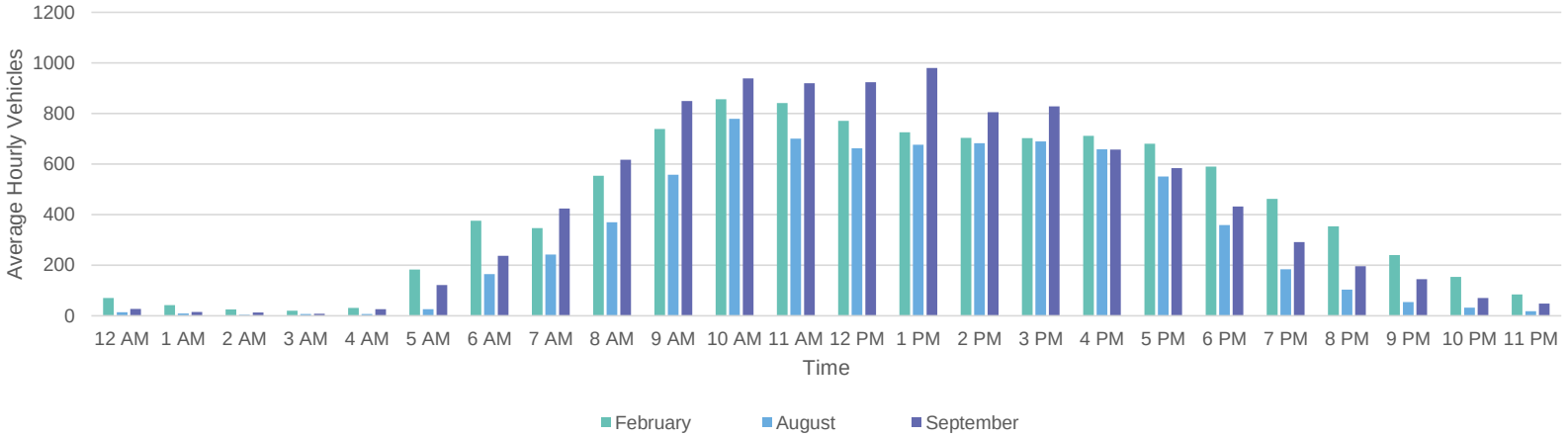


Appendix figure 6 – Screenline B – Weekday Southbound Total Volumes (Unadjusted)

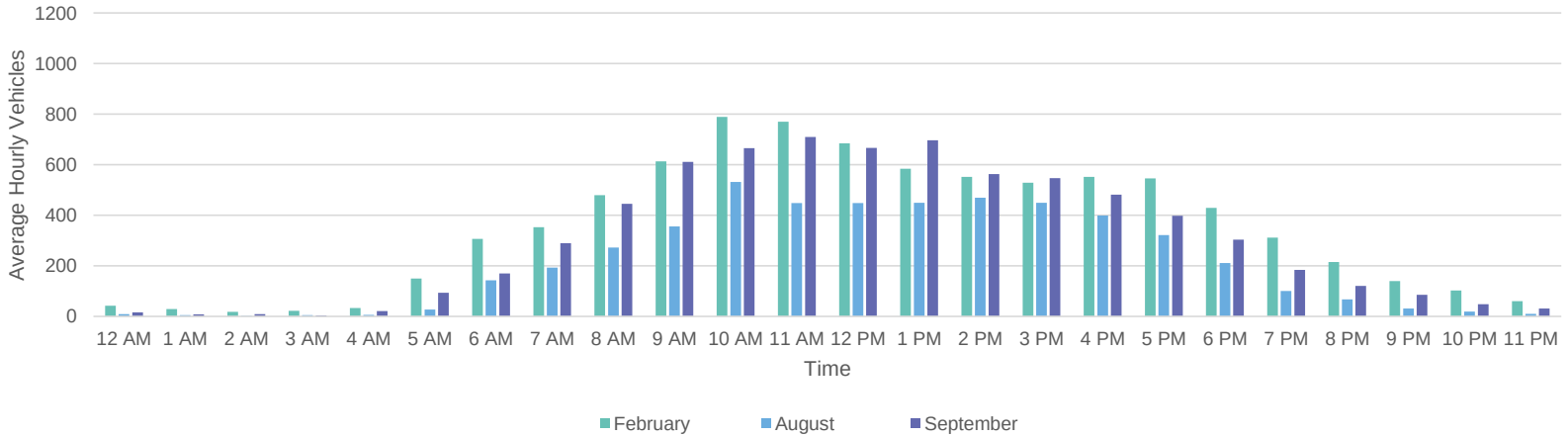


SCREENLINE B - WEEKEND UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 7 – Screenline B – Weekend Northbound Total Volumes (Unadjusted)

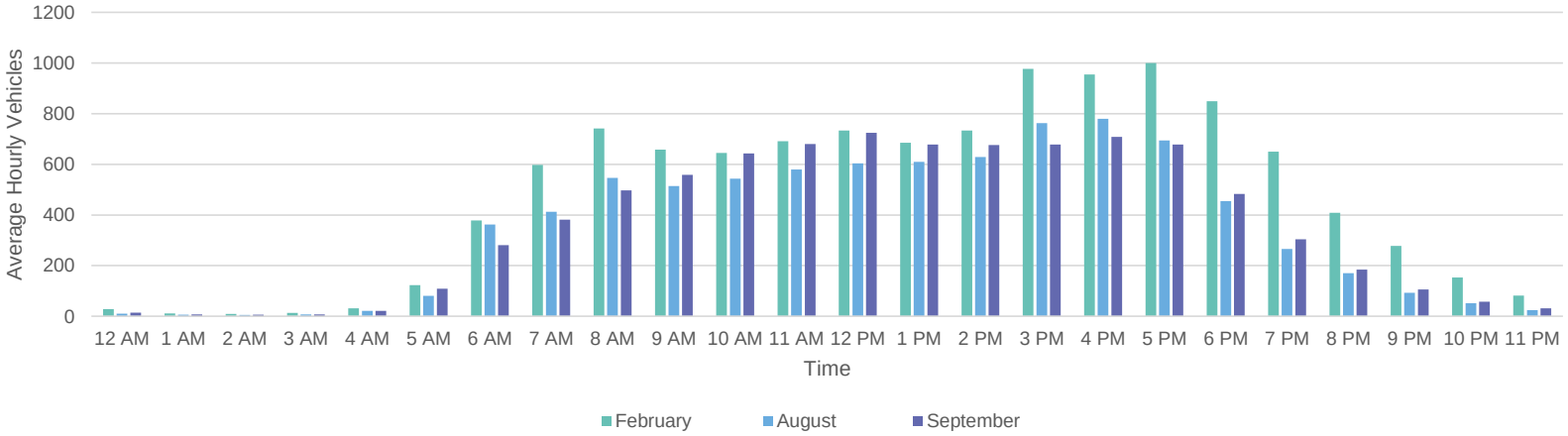


Appendix figure 8 – Screenline B – Weekend Southbound Total Volumes (Unadjusted)

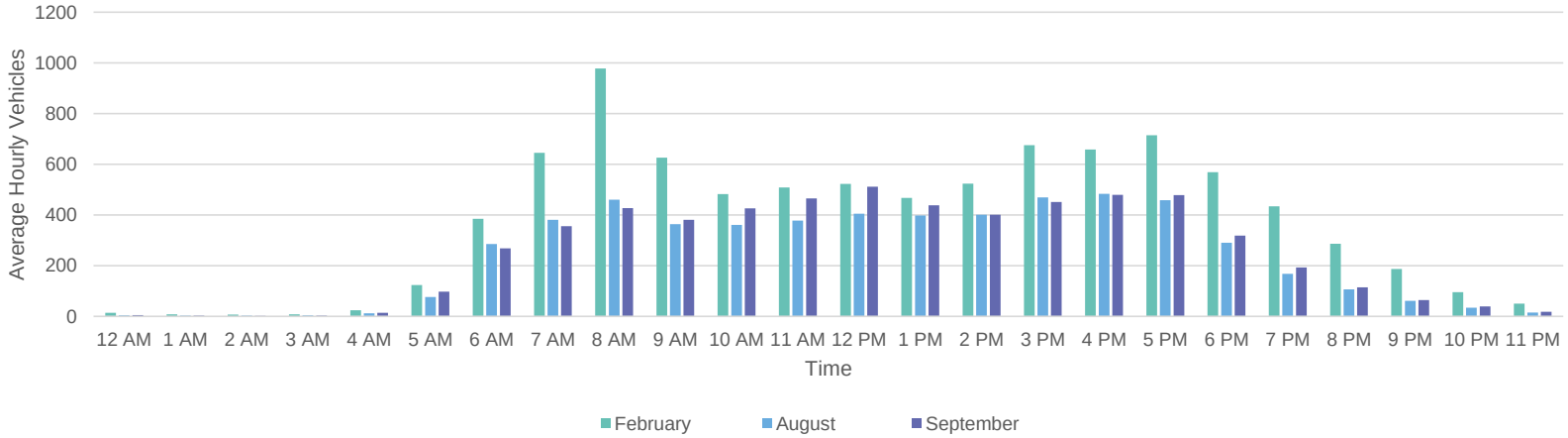


SCREENLINE C - WEEKDAY UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 9 – Screenline C – Weekday Northbound Total Volumes (Unadjusted)

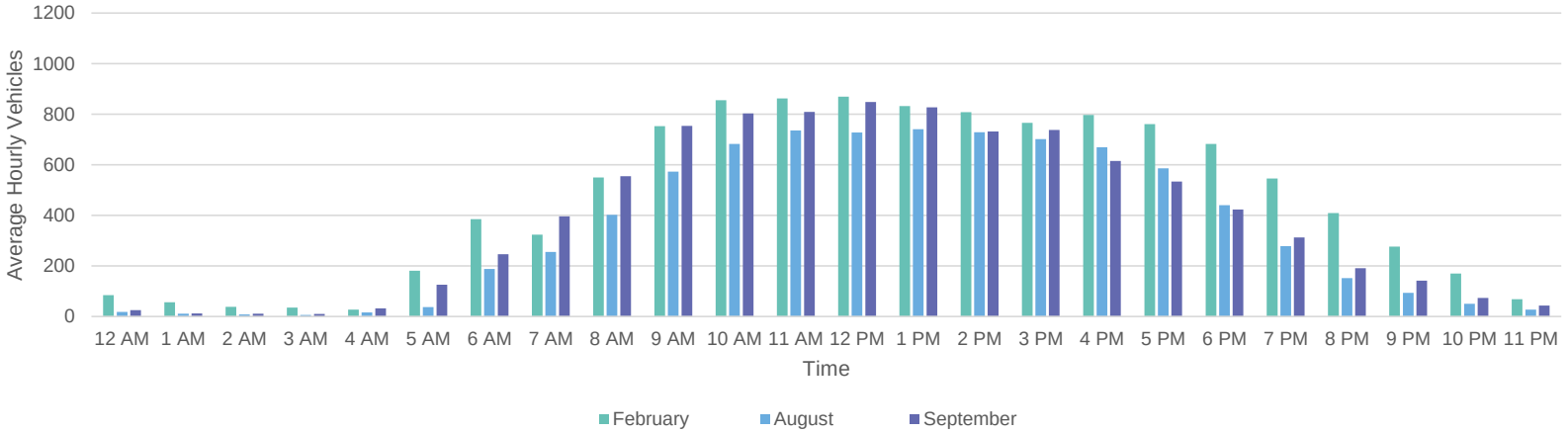


Appendix figure 10 – Screenline C – Weekday Southbound Total Volumes (Unadjusted)

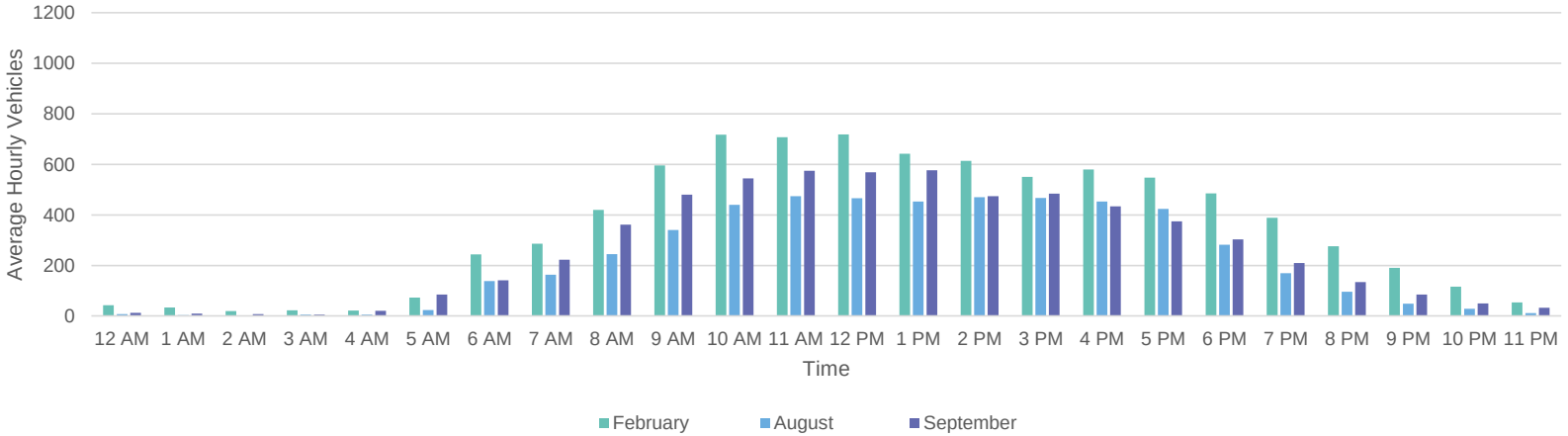


SCREENLINE C - WEEKEND UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 11 – Screenline C– Weekend Northbound Total Volumes (Unadjusted)

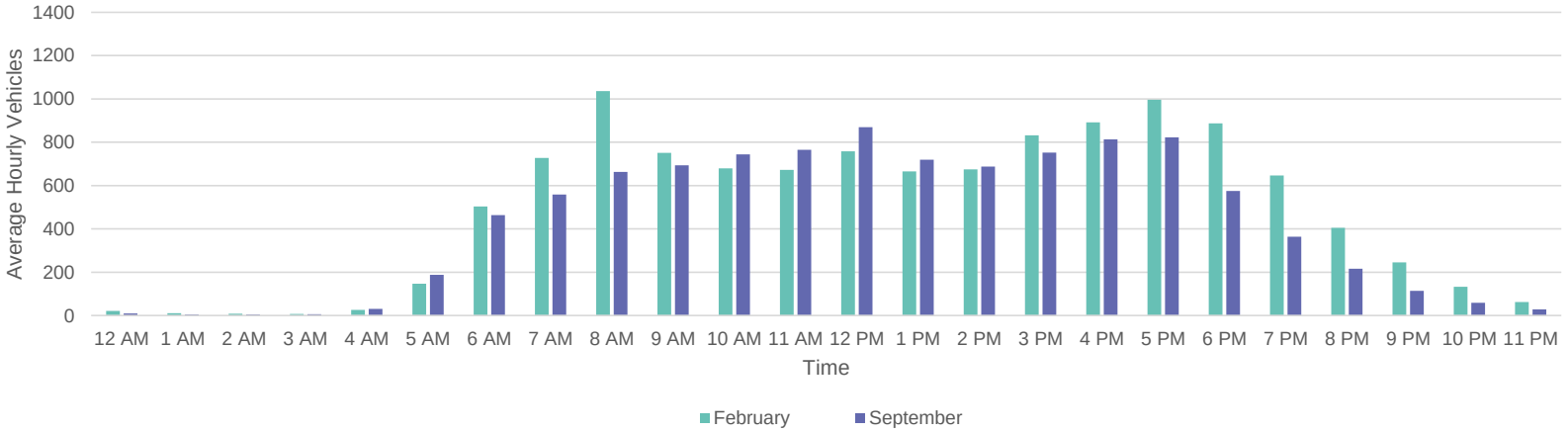


Appendix figure 12 – Screenline C – Weekend Southbound Total Volumes (Unadjusted)

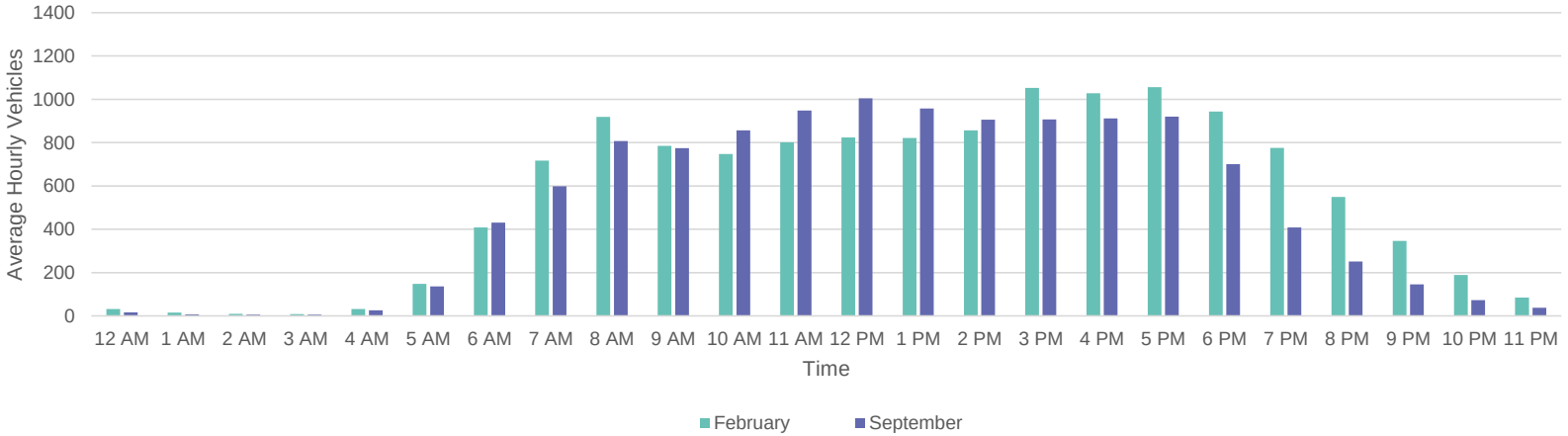


SCREENLINE D - WEEKDAY UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 13 – Screenline D – Weekday Eastbound Total Volumes (Unadjusted)

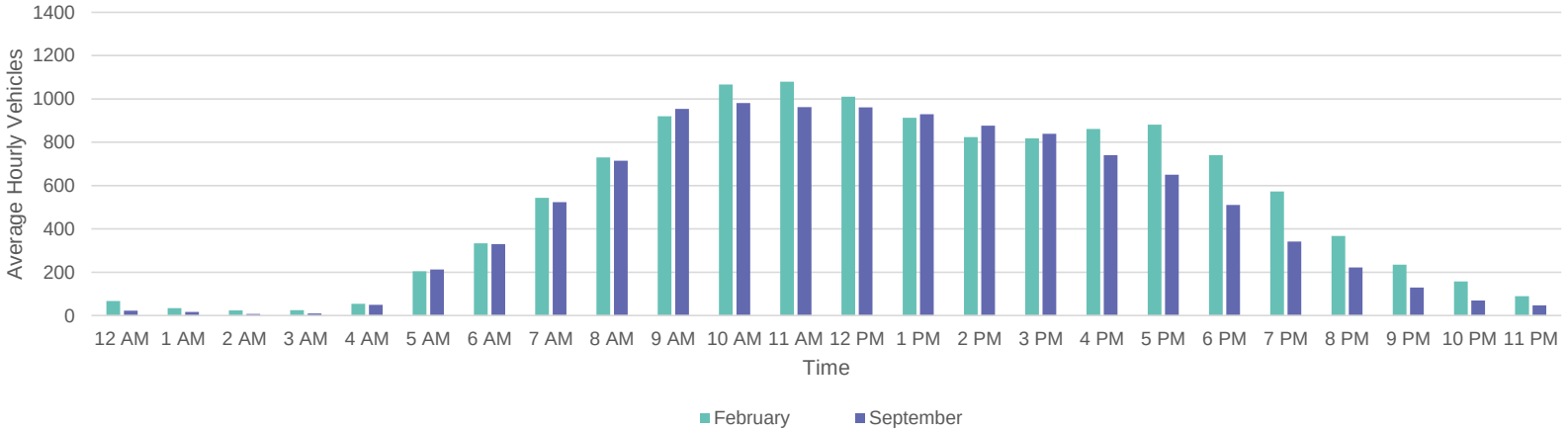


Appendix figure 14 – Screenline D – Weekday Westbound Total Volumes (Unadjusted)

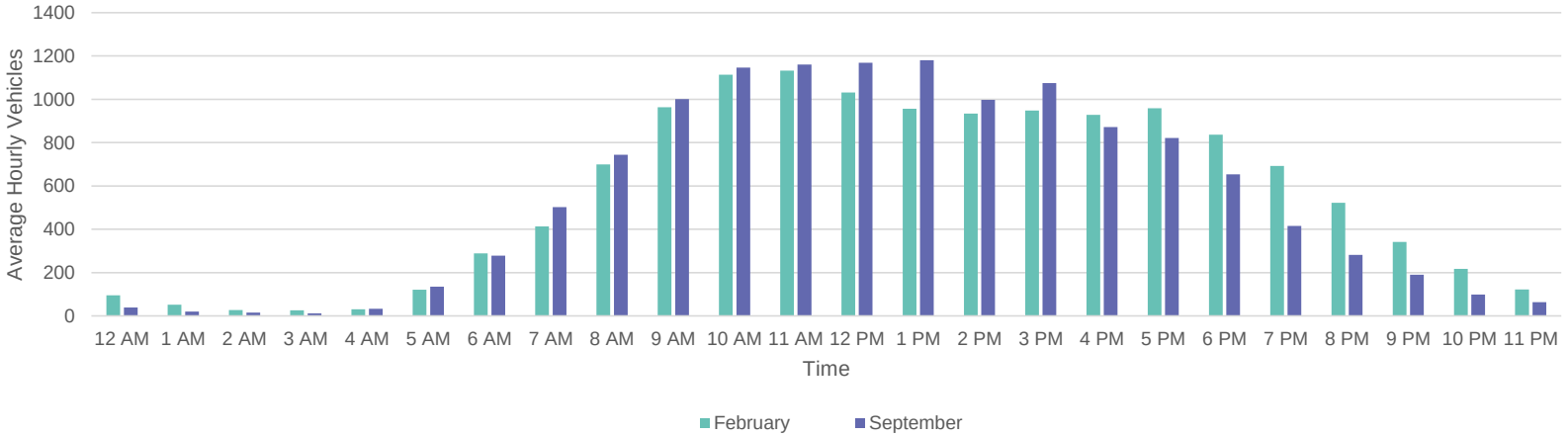


SCREENLINE D WEEKEND UNADJUSTED AVERAGE TOTAL VOLUMES

Appendix figure 15 – Screenline D – Weekend Eastbound Total Volumes (Unadjusted)

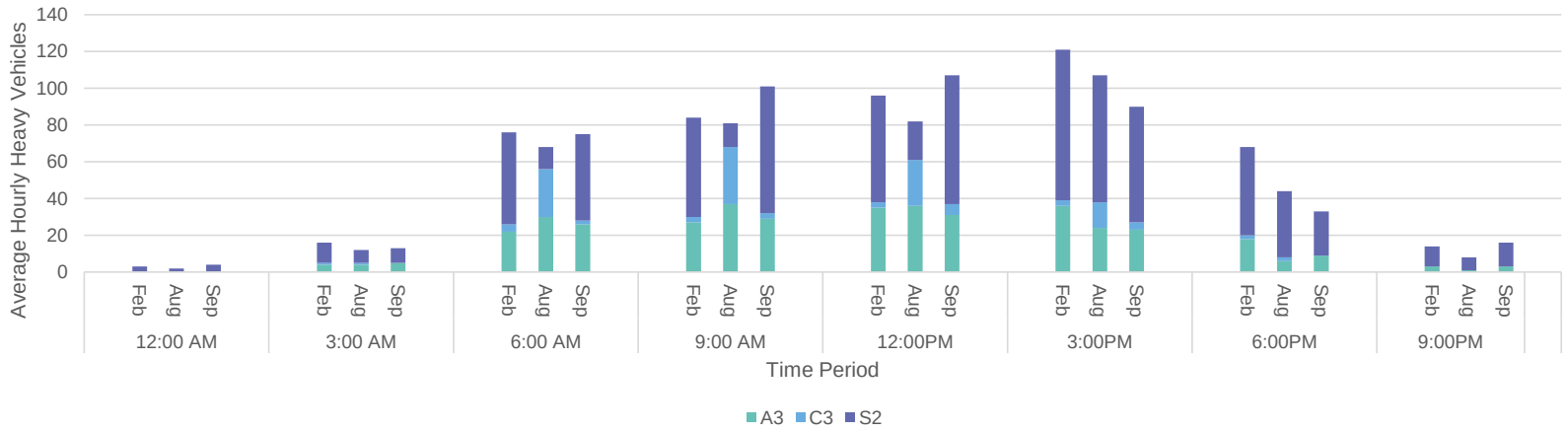


Appendix figure 16 – Screenline D – Weekend Westbound Total Volumes (Unadjusted)

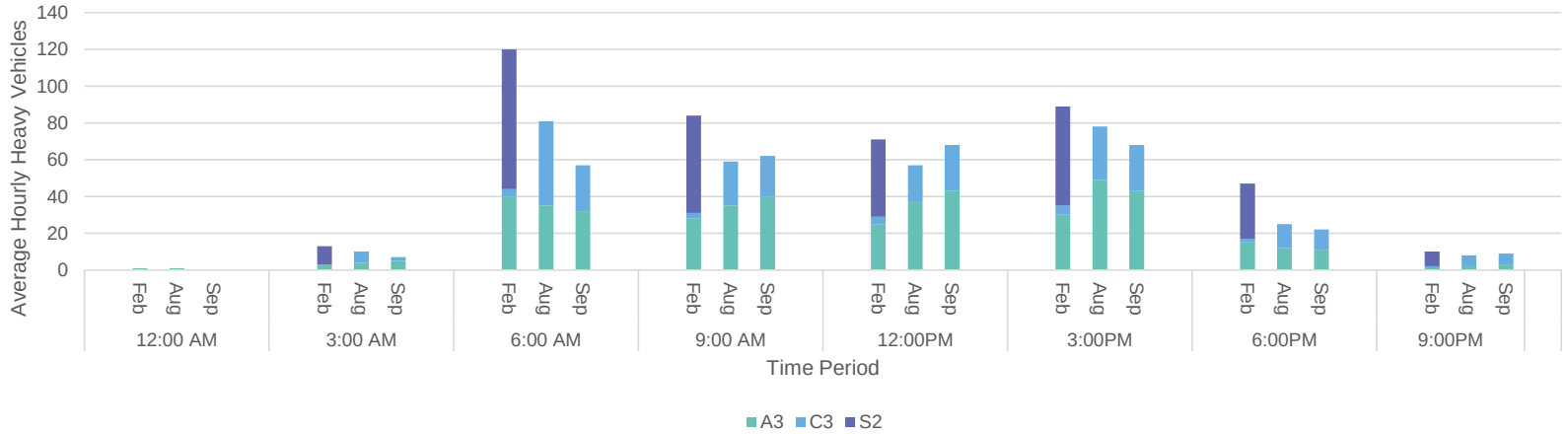


SCREENLINE C WEEKDAY UNADJUSTED AVERAGE HEAVY VEHICLE VOLUMES

Appendix figure 33 – Screenline C – Weekday Northbound Heavy Vehicle Volumes (Unadjusted)

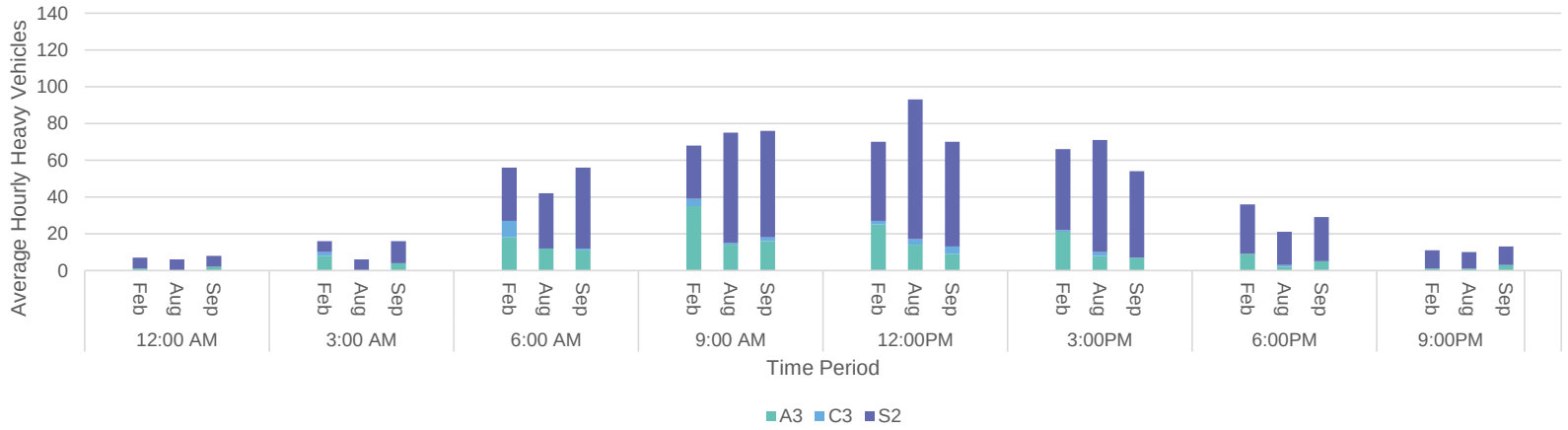


Appendix figure 34 – Screenline C – Weekday Northbound Heavy Vehicle Volumes (Unadjusted)

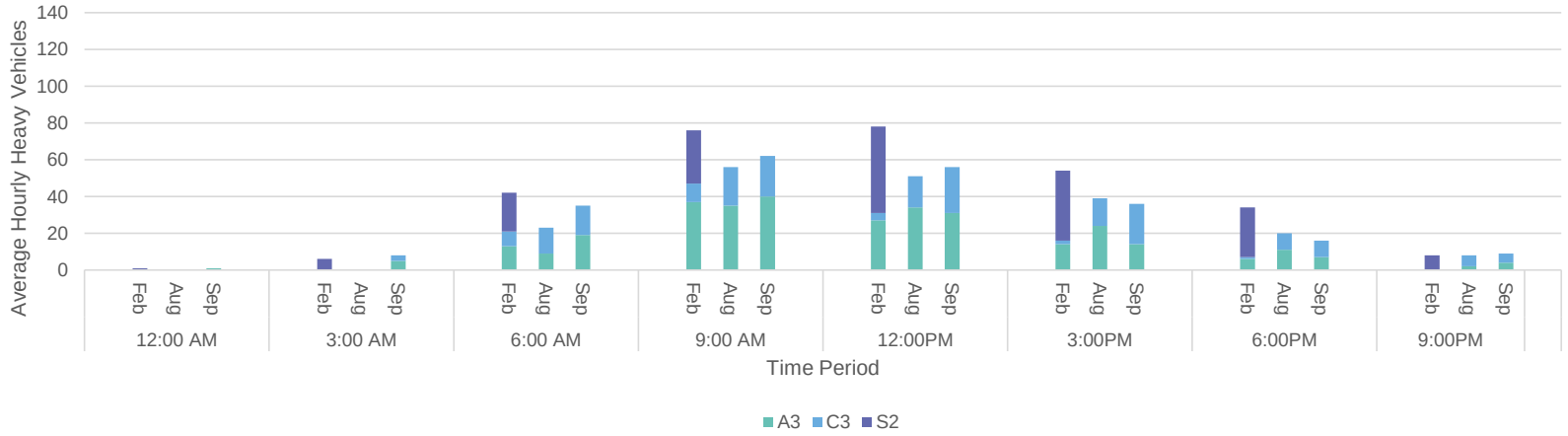


SCREENLINE C WEEKEND UNADJUSTED AVERAGE HEAVY VEHICLE VOLUMES

Appendix figure 35 – Screenline C – Weekend Northbound Heavy Vehicle Volumes (Unadjusted)



Appendix figure 36 – Screenline C – Weekend Northbound Heavy Vehicle Volumes (Unadjusted)



7.0 GENERAL BUSINESS

7.1 UPDATE ON ECOMONIC DEVELOPMENT STRATEGY – DEP KEMPE – 5 MINS

7.2 OPEN DISCUSSION – IDEAS TO SUPPORT LOCAL BUSINESSES – 15 MINS