



To the General Manager

Attach

1. Traffic Management Plan
 2. Angle Parking Layout
-

SUBJECT: (4.3) Moodie Street, North Sydney– Requests for one-way traffic

AUTHOR: Report of Traffic & Transport Engineer, Iman Mohammadi

DESCRIPTION/SUBJECT MATTER:

Council has received representations from residents of Moodie Street concerning speeding and rat-running and requests for Moodie Street to be converted to one-way northbound due to the restricted carriageway. Residents have also requested a footpath in Moodie Street from Ernest Street to the start of the bend.

North Sydney Council's Local Area Traffic Management (LATM) Zone 2 Action Plan includes the following proposals to address the issues previously raised by the community:

- LATM ID T.35a – convert Moodie Street to one-way (Long term)
- LATM ID T35b - Create 40km/h local area speed zone (Medium term)
- LATM ID T.29 - Partial closure of minor roads at main roads (no entry) (Medium term)
- LATM ID T.145 - speed cushions (Medium term)
- LATM ID T.146 – angle parking (Not recommended in isolation)
- LATM ID T.147 – construct footpath through removal of parking in northern section of Moodie Street (Medium term)
- LATM ID T.148 – Shared Zone (Long term)

This report details the outcomes of the Council's investigations on the above issues.

RECOMMENDATION:

- 1. THAT** Council does not proceed with converting Moodie Street to one way northbound due to the impact of traffic diversions to the surrounding streets including Ernest St, Falcon St and Lytton Street.
- 2. THAT** if Council proceeds with the proposed conversion of Moodie Street to one way northbound, all affected residents, including those living in Ernest Street, Falcon Street and Lytton Street, be consulted.
- 3. THAT** Council consider the alternate solution to construct a footpath in the northern section of Moodie Street and offset some of the parking loss by converting the parallel parking in the central section of Moodie Street to angle parking.

CONSULTATION REQUIREMENTS

Consultation will be undertaken in accordance with Council's Community Engagement Protocol

Relates to ECM No: 7288725, 7303955, 7561568, 7695837, 7702808, 7867525, 7869335, 7891936, 7896025, 7966018, 8155868, 8258417, 8261629, 8283807, 8293872, 8278956, 8301377, 8303693, 8304267, 8309486, 8319890, 8322985

Standard or Guideline Used: AS1742.2, 2890.5

Signs & Lines Priority: N/A

Precinct and Ward: Registry/ Tunks

Impact on Bicycles: Nil

Impact on Pedestrians: the proposal may improve pedestrian safety in the street

Impact on Parking: Proposed conversion of Moodie Street to one-way will not affect parking.

DETAIL

Existing Conditions

Moodie Street is a two-way local road situated between Ernest Street and Falcon Street to the west of the Warringah Freeway. Moodie Street is approximately 270m long with a dog-leg bend in the middle of the street and the carriageway width varies from approximately 5 metres wide in the two north-south sections to 12.5 metres wide in the east-west section.

Moodie Street has an average daily traffic volume of 1,149 vehicles per day with a predominant flow of traffic in the southbound direction (74%). Peak traffic is in the order of 150 vehicles per hour in the AM and PM peak (times). The 85th percentile speed is 37km/h. 2.9% of vehicles are heavy vehicles which is typical for a local road.

Parking is permitted on the western side of the street in the northern section, on the eastern side of the street in the southern section and on both sides of the street in the middle section of the street.

The southern and middle sections of the street have footpaths on both sides of the road, however the northern section contains very narrow footpaths (0.6m wide) which also contain obstructions such as power poles and signage poles in places.

A review of the past 5 years of available TfNSW crash data to December 2019 revealed no crashes in Moodie Street.



Figure 1: Moodie St at the bend, looking North

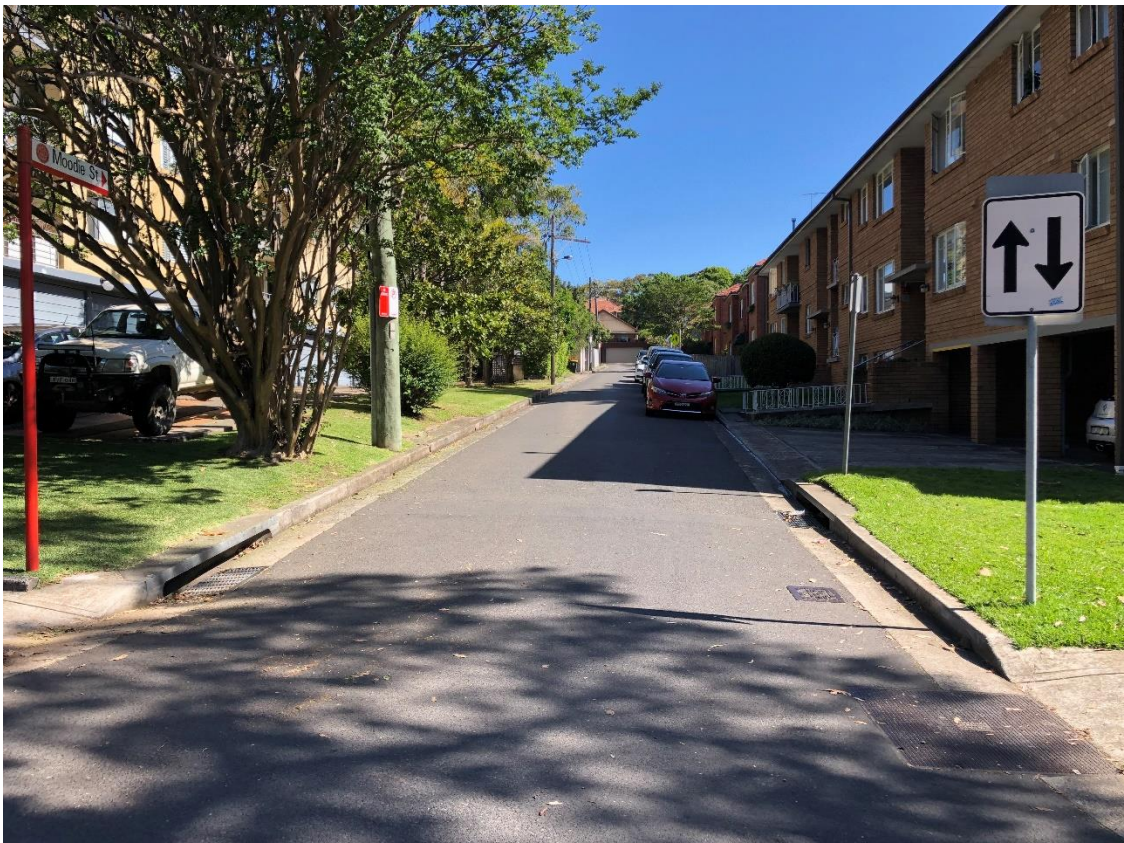


Figure 2: Moodie St at Ernest St, looking South



Figure 3: Moodie St, existing east side footpath



Figure 4: Moodie St, existing east side footpath close to Ernest St



Figure 5: Moodie St, existing west side footpath



Figure 6: Moodie St, existing west side footpath close to Ernest St



Figure 7: Moodie St, at Falcon St, looking North



Figure 8: Moodie St, at Falcon St, looking South



Figure 9: Moodie St, in approach to the bend, looking West



Figure 10: Moodie St, in approach to the bend, looking East

1. Conversion of Moodie Street into one-way northbound

The issue of the speeding motorists and rat run in the street was raised by residents through the LATM consultation period requesting for Moodie Street to be converted to one way northbound. Since the LATM Action Plans were adopted, residents have requested Council to investigate this issue in Moodie Street.

As part of the North Sydney Integrated Traffic and Parking Strategy, Council has adopted Local Area Traffic Management (LATM) Action Plans (formerly known as TAPAS). The LATM implementation procedure adopts a methodology that takes into consideration an area wide traffic management scheme and allows the community's high priority traffic projects to be ranked according to a number of criteria, including safety, traffic volume, speeds, pedestrian and cycling volumes, surrounding land uses, and alignment with the Community Strategic Plan.

The conversion of the existing two-way flow in Moodie Street to one-way is listed in the LATM Zone 2 Action Plan as a long-term priority.

Council traffic Engineer visited the site on 28 October 2020 to observe the traffic and driver behaviour in Moodie Street and at the intersection of Ernest Street with Moodie Street.

The site visit revealed that vehicles exiting Moodie Street into Ernest Street have enough sight distance to see vehicles entering Moodie Street from Ernest Street. There is also a wide driveway and No Stopping restriction totalling 20m long on the west side of Moodie Street and in approach to Ernest Street which provides sufficient storage for cars to pull over and give way to vehicles entering Moodie Street. This was confirmed during the site visit.

To be able to determine if the provision of One-way traffic is feasible, a Traffic management Plan (TMP) was prepared detailing the proposal and its impacts on the traffic network surrounding Moodie Street. A copy of this TMP is attached to this report.

If entry to Moodie Street from Ernest Street is restricted, all existing southbound traffic entering Moodie Street from Ernest Street will continue traveling west in Ernest Street, left into Lytton Street, left into Falcon Street and left in Moodie Street or continue traveling to the freeway ramp. The existing southbound local traffic in Moodie Street will also be forced to travel northbound in Moodie Street, entering Ernest Street and follow the same route as mentioned above to join traffic in Ernest Street and Falcon Street. This is approximately additional 400m distance to travel to enter Moodie St from Falcon St.

It is expected that Moodie Street will have an increase 7-day average of 5% to 11% in traffic volume northbound, during the afternoon peak hours, while the existing traffic volume remains unchanged in the morning peak.

It is also expected that Lytton Street will have an increase 7-day average of 73.3% to 89.5% in traffic volume southbound, during the morning and 7-day average of 60.9% to 71.4% afternoon peak hours if Moodie Street is made one-way northbound.

It should be also noted that due to the school within the vicinity of Moodie Street, additional travel time and delays are expected in Ernest Street.

Converting Moodie Street one-way northbound is very likely to impact on the surrounding streets and Lytton Street where traffic volume in the street during the afternoon peak is expected to increase between 60.9% to 71.4%.

The functional classification of the street is important when determining the impact on residential/environmental amenity. The TfNSW Guide to Traffic Generating Developments states that the environmental capacity performance for a local road is a goal of 200 vehicles per hour and a maximum of 300 vehicles per hour. While the diversion of southbound traffic from Moodie Street to Lytton Street is not likely exceed the environmental capacity in Lytton Street, the increase in the order of 70% is likely to be felt by residents.

In addition, making Moodie Street one way, may cause more speeding in the street as drivers may become used to the lack of opposing traffic and increase their speed.

2. Provision of footpath in Moodie Street from Ernest Street to the start of bend.

Residents have also requested Council to provide a footpath in Moodie Street from Ernest Street to the start of bend. This section of road is approximately 5.5m wide with two-way traffic and parking on western side.

This section of Moodie Street lacks a standard footpath in either side. In fact, there are currently concrete footpaths of 600mm wide on both side of the road which is significantly less than the minimum 1.2 metres recommended width for pedestrian access.

Provision of a footpath on one side of the road requires occupation of portion of the road reserve. This means that all 13 parking spaces on the western side of the road would need to be removed.

The parking occupancy rate at this section of Moodie Street is above 80% which demonstrates a high occupancy rate. Parking removal at this location may impact residents and other road users who rely on the on-street parking.

A 10km/h Shared Zone would allow parking to be retained while formalising the shared pedestrian and vehicle access on the carriageway, however the current traffic volumes in Moodie Street are above the TfNSW maximum thresholds for a Shared Zone. Shared Zones can also be costly to implement due to the changes to pavements and traffic calming required to comply with TfNSW requirements to create self-enforcing speed environments. As such the Shared Zone ranks as a lower priority in the LATM Action Plan compared to other options.

Alternative solutions

In order to alleviate the speeding and rat run concerns in the street, other options were investigated.

Option 1: Installation of Speed humps/cushions

Provision of speed humps/cushions in Moodie Street was investigated.

The speed limit in Moodie Street is 50km/h and the result of the tube counts revealed that the 85th percentile of motorists are travelling at or below 37km/h. The 85th percentile speed is the speed at or below which 85% of all vehicles are observed to travel under free-flowing conditions past a nominated point.

In addition, there are no recorded crashes in Moodie Street in the past 5 years and as such provision of speed humps/cushions are not recommended.

Option 2: Narrow the carriageway width using physical barriers, re-arranging parking configuration and delineation

The road carriageway width in the central section of Moodie Street is approximately 13m wide. It is also noted that the road is very wide at both ends, therefore potential for higher speeds and cutting corners by motorists.

Parking is permitted on north and south sides of Moodie Street. There are seven (7) spaces on the northern side, six (6) spaces on the south side and one space on the eastern side, totaling 14 spaces in this section of Moodie Street.

Parking re-arrangement to angle parking on the south side will result in net loss of three (3) spaces and creates difficulties with vehicles turn paths.

Parking re-arrangement to angle parking on the north side and kerb buildout at the north corner of street, will result in net gain of three (3) spaces. This option could be considered to offset some of the parking loss if a footpath is constructed in the northern section of Moodie Street, and to provide a traffic calming effect without impacting the flow of traffic in Moodie Street and impacts on surrounding streets.

TRAFFIC MANAGEMENT PLAN (TMP)

Moodie Street from Ernest Street to Falcon Street, North Sydney

**Proposed conversion of Moodie street into one-way
traffic Southbound**

NORTH SYDNEY COUNCIL

November 2020



Background

North Sydney Council has received requests from residents of Moodie Street to convert the existing narrow two-way Moodie Street to one-way traffic to alleviate the speeding and rat run issues in the street particularly in the morning and afternoon peak hour.

Moodie Street is listed in Council's Local Area Traffic Management (LATM) Action Plan Zone 2, to convert the street to one-way traffic.

The purpose of this TMP is to assess the proposal and determine if conversion of Moodie Street to One-way is feasible otherwise to determine other treatment to address the issues in Moodie Street.

Site description

The existing Moodie Street with "dog-leg" geometry consists of:

- South-north bound traffic from Ernest Street with approximately 5m wide kerb to kerb carriageway and parking on the western side
- East-west traffic with approximately 12.5m wide kerb to kerb carriageway and parking on north and south sides
- North-south bound traffic from Falcon Street with approximately 5m wide kerb to kerb carriageway and parking on the eastern side.
- There has not been any accidents recorded in Moodie Street in the past 5 years

A locality map is shown on figure 1 below.

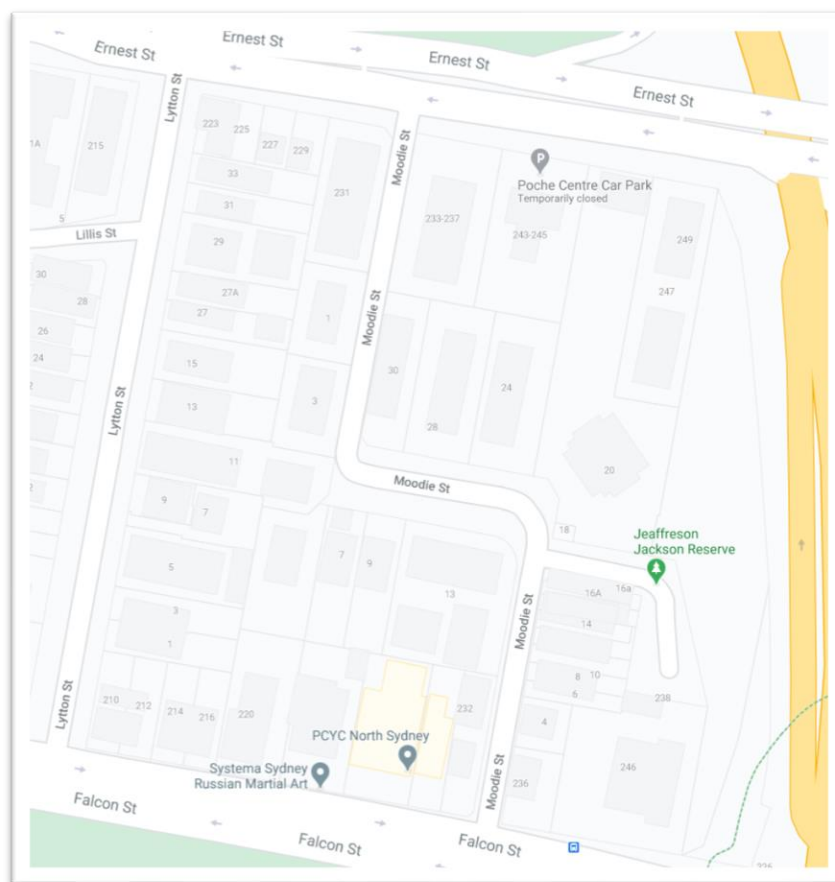


Figure 1: Lytton St Locality Map

A. Description or detailed plan of Proposed Measures.

North Sydney Council is proposing to convert the existing two-way Moodie Street from Falcon Street to one-way southbound to alleviate the speeding and rat run issues in the street particularly in the morning and afternoon peak hour.

B. Identification and assessment of impact of proposed measures.

Moodie street connects Ernest Street to Falcon Street. Converting Moodie street to One-way northbound will divert traffic to the surrounding streets including Ernest St, Falcon St and Lytton Street.

Speed and traffic volume counts were undertaken in Moodie Street and Lytton Street for seven days from 30th November to 6th December 2019. The 85th percentile speed, 7 days, average daily and maximum hourly traffic volumes in the morning and afternoon are summarised below:

Location	Direction	Volume		Max Volume (hourly)		85th Percentile Speed (km/h)
		7 days (Total)	Daily (Avg)	AM	PM	
Moodie 1081 (near HNo.1)	Northbound	1,984	283	38	77	36
	Southbound	5,973	853	134	99	38
	Bidirectional	7,957	1,137	152	155	37
Moodie 1082 (near HNo.11)	Northbound	2,006	287	38	82	30
	Southbound	5,963	852	135	103	35
	Bidirectional	7,969	1,138	151	162	34
Moodie 1083 (near HNo.4)	Northbound	2,062	295	36	78	32
	Southbound	5,981	854	141	95	37
	Bidirectional	8,043	1,149	149	113	37
Lytton 1080 (near HNo.15)	Northbound	3,230	461	47	64	35
	Southbound	8341	1192	154	165	30
	Bidirectional	11,571	1,653	188	214	32

Table 1: Summary of speed and volume counts in Moodie St and Lytton St

Restricting traffic entering into Moodie Street from Ernest Street will detour traffic to Lytton Street and Falcon Street. This is likely resulting in increase of traffic volume into Lytton Street and Falcon Street, especially during the morning and afternoon peak hour.

The increase in traffic volume may have an impact on the serviceability of Lytton Street, Ernest Street and Falcon Street. It is also predicted that traffic queuing is likely to be increased in Lytton Street's exit to Falcon Street and entry into Moodie Street from Falcon Street. Further assessment, including intersection modelling may be needed to confirm affected roads serviceability and queuing.

C. Measures to ameliorate the impact of re-assigned traffic.

Existing traffic flow during tube count data collection between 30 November and 6 December 2019

Assumption 1: All Northbound traffic volume collected in front of No.4 Moodie Street have entered from Falcon Street. This assumption is based on the low number of driveway access (3 properties) between Falcon Street and the tube location fronting No.4 Moodie Street

Assumption 2: All Southbound traffic volume collected in front of No.1 Moodie Street have entered from Ernest Street. This assumption is based on the very low number of driveway access (1 property with 3 parking spaces) between Ernest Street and the tube location fronting No.1 Moodie Street

Moodie Street:

- The 7-day average northbound peak traffic volume exiting Moodie St into Ernest Street is 18 vehicles, during the morning and afternoon peak.
- The 7-day average southbound peak traffic volume exiting Moodie St into Falcon Street is 102 and 75 vehicles during the morning and afternoon peak respectively.

Lytton Street:

- The 7-day average northbound peak traffic volume is 29 and 45 vehicles during the morning and afternoon peak respectively
- The 7-day average southbound peak traffic volume is 114 and 105 vehicles during the morning and afternoon peak respectively

Proposed One-Way entry from Falcon Street and forecasted traffic flow

If entry into Moodie Street from Ernest Street is restricted, all existing southbound traffic entering Moodie Street from Ernest Street (38 vehicles in morning and 77 vehicles in the afternoon peak) will continue traveling west in Ernest Street, left into Lytton Street, left into Falcon Street and left in Moodie Street or continue traveling to the freeway ramp.

The existing southbound local traffic in Moodie Street will also be forced to travel northbound in Moodie Street, entering Ernest Street and follow the same route as mentioned above to join traffic in Ernest Street and Falcon Street. This is approximately additional 400m distance to travel to enter Moodie St from Falcon St.

Impact on Moodie Street traffic flow

Comparing the result of tube counts during the morning peak at the entrance to Moodie Street from Ernest Street (Count 1081) to the counts at the exit at Falcon Street (Count 1083) reveals that the volume of traffic decreases at Falcon street which indicates the difference in traffic volume is likely the local traffic terminating their journeys in Moodie Street.

On the other hand, comparing the result of same tube counts during the afternoon peak at the entrance to Moodie Street from Ernest Street (Count 1081) to the counts at the exit at Falcon Street (Count 1083) reveals that the volume of traffic increases at Falcon street which indicates the difference in traffic volume is likely the local traffic traveling south in Moodie Street.

Based on the above, it can be concluded that traffic volume in the morning peak traveling northbound in Moodie Street stays unchanged, however this figure is increased in the afternoon peak as the local residents take the detoured of traveling northbound to leave Moodie Street.

It is expected that Moodie Street will have an increase 7-day average of 5% to 11% in traffic volume northbound, during the afternoon peak hours, while the existing traffic volume remains unchanged in the morning peak.

Additionally, road users traveling in Ernest Street and intending to enter Moodie Street, are required to travel an additional 400m to enter Moodie Street from Falcon Street.

Impact on Lytton Street traffic flow and volume

As mentioned before, if the Moodie Street's one-way southbound is implemented, traffic southbound in Moodie Street will be diverted to Lytton Street.

To determine a forecasted traffic volume in Lytton Street as the result of this change, traffic southbound in Moodie Street close to the Falcon Street exit (count 1083) needs to be added to the existing Lytton Street volume (count 1080)

It is expected that Lytton Street will have an increase 7-day average of 73.3% to 89.5% in traffic volume southbound, during the morning and 7-day average of 60.9% to 71.4% afternoon peak hours if Moodie Street is made one-way northbound. This is demonstrated in Appendix B and C

It should be also noted that due to the school within the vicinity of Moodie Street, additional travel time and delays are expected in Ernest Street.

Appendix "B" and "C" demonstrate current and forecasted traffic movements and traffic volume in Lytton Street.

D. Assessment of public transport services affected

Buses will not be affected by the proposal. Taxis and hire cars will be impacted similar to other road users.

E. Details of provision made for emergency vehicles, heavy vehicles, cyclists and pedestrians.

No special provisions will be made for emergency vehicles.

F. Assessment of effect on existing and future developments with transport implications in the vicinity of the proposed measures

There is likely to be some future commercial and mixed-use re-development in this area. All future developments will be assessed case by case if the one-way proposal is approved and implemented.

G. Assessment of effect of proposed measures on traffic movements in adjoining Council areas.

This proposal will not impact upon traffic movements in adjoining Council areas.

H. Public Consultation Process

Is a public consultation process required?

The residents and affected properties by this proposal will be consulted by Council for comment and feedback and received general support.

Conclusion:

The provision of making Moodie Street one-way northbound will have a big impact on the surrounding streets and in particular Lytton Street where traffic volume in the street during the afternoon peak is expected to increase between 60.9% to 71.4%.

In addition, making Moodie Street one way, may cause more speeding in the street as drivers may become used to the lack of opposing traffic and increase their speed.

Appendix A

Locality Map;

Tube Counts location and

Peak hour traffic volume

(7am- 10am, 3pm – 6pm)

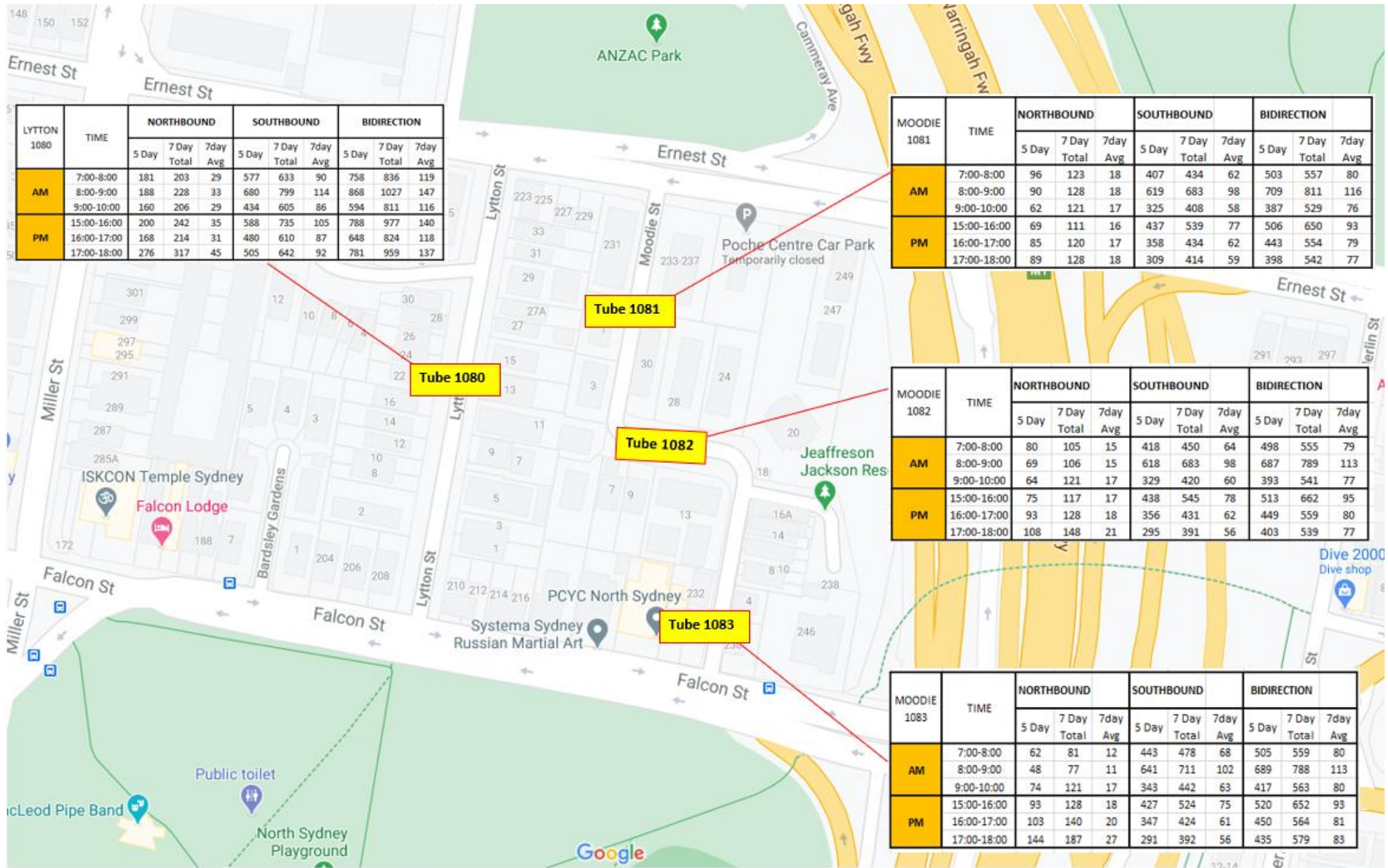


Figure 1: Location of Tube Counts and summary of traffic volume during the morning and afternoon peak

Appendix B

Existing traffic flow in

Moodie Street

and

Lytton Street



Figure 2: Existing Traffic Movements in and out of Moodie Street and Lytton Street

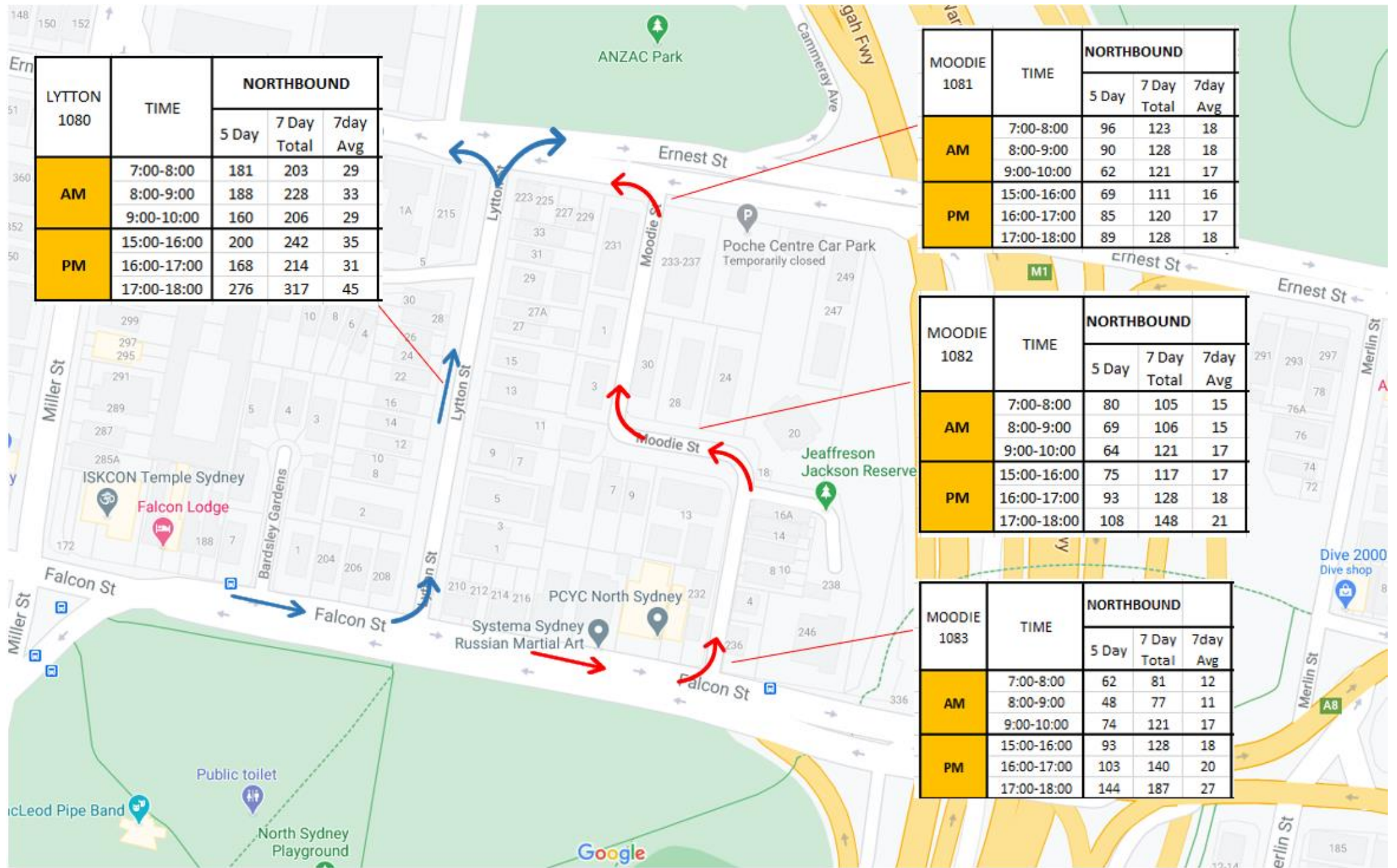


Figure 3: Existing traffic volume Northbound

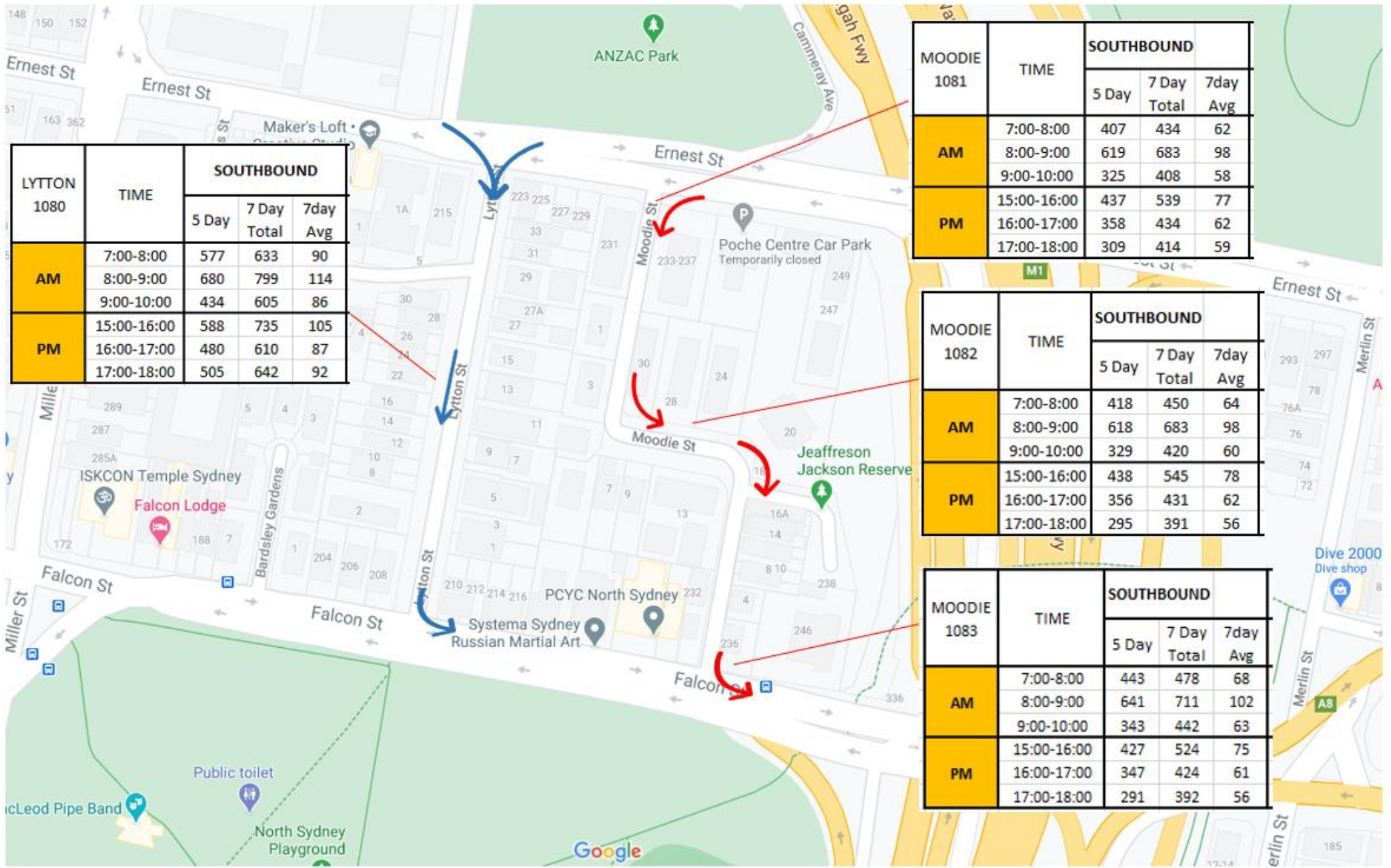


Figure 4: Existing traffic volume Southbound

Appendix C

Proposed “No Entry” at Ernest Street,
forecasted traffic movements and impacts of “No Entry” on
the surrounding streets during morning and afternoon peak
(7am- 10am and 3pm – 6pm)

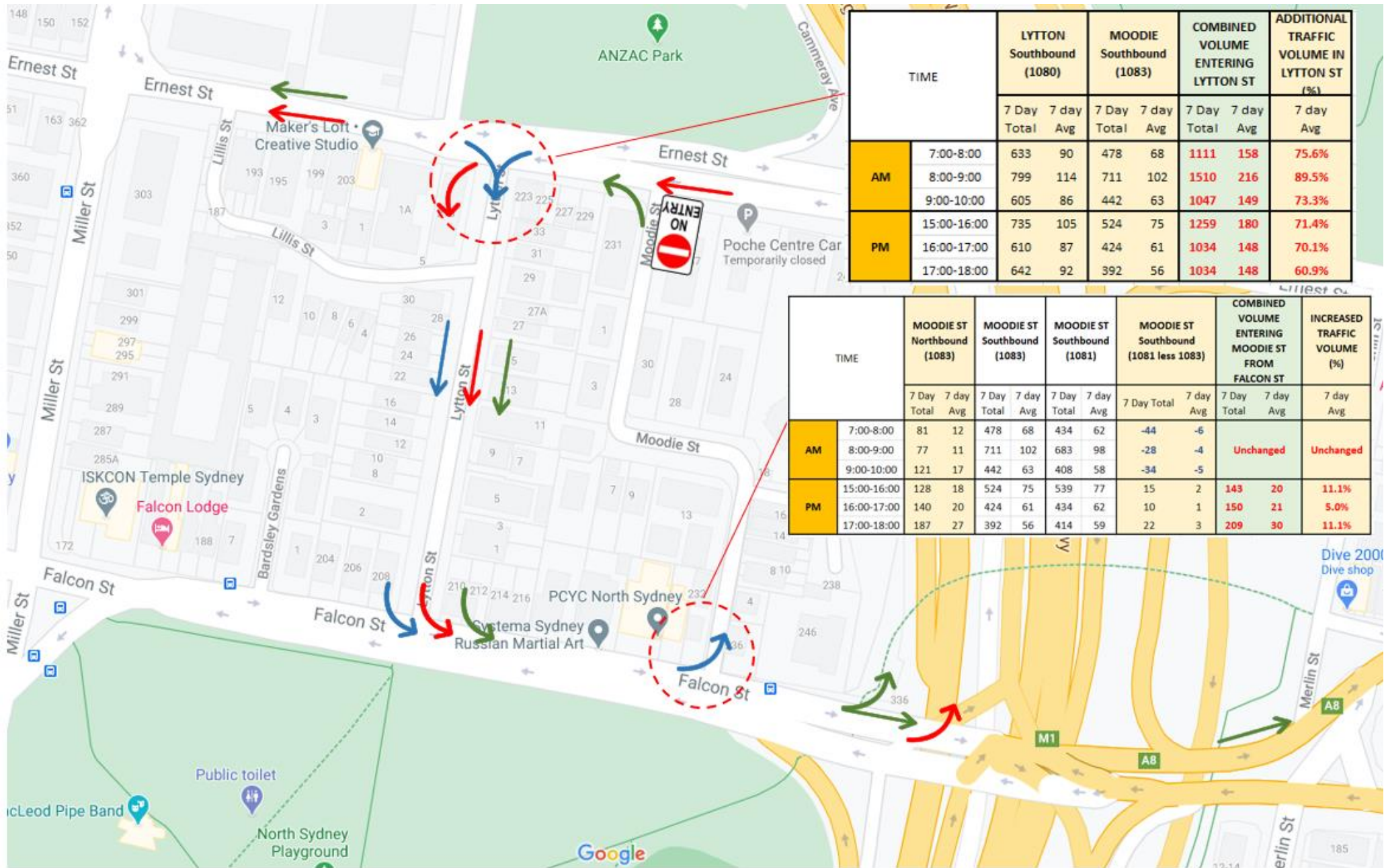
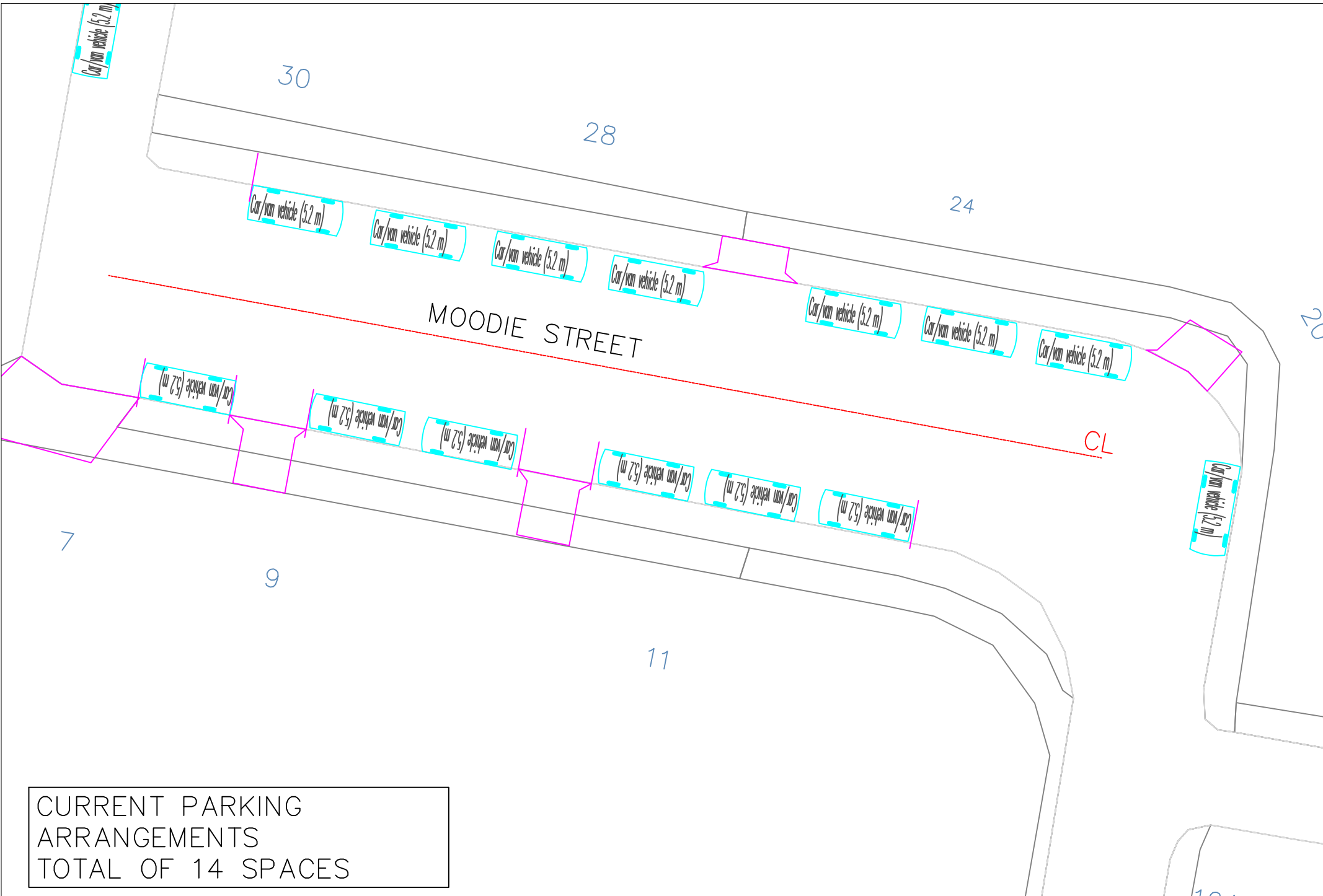


Figure 5: Proposed "No Entry" at Ernest Street, forecasted traffic movements and its impacts on the surrounding streets during morning and afternoon peak hour (7am- 10am and 3pm – 6pm)



CURRENT PARKING
ARRANGEMENTS
TOTAL OF 14 SPACES

PROPOSED KERB
BUILD OUT AND
PLANTS

30

28

24

20

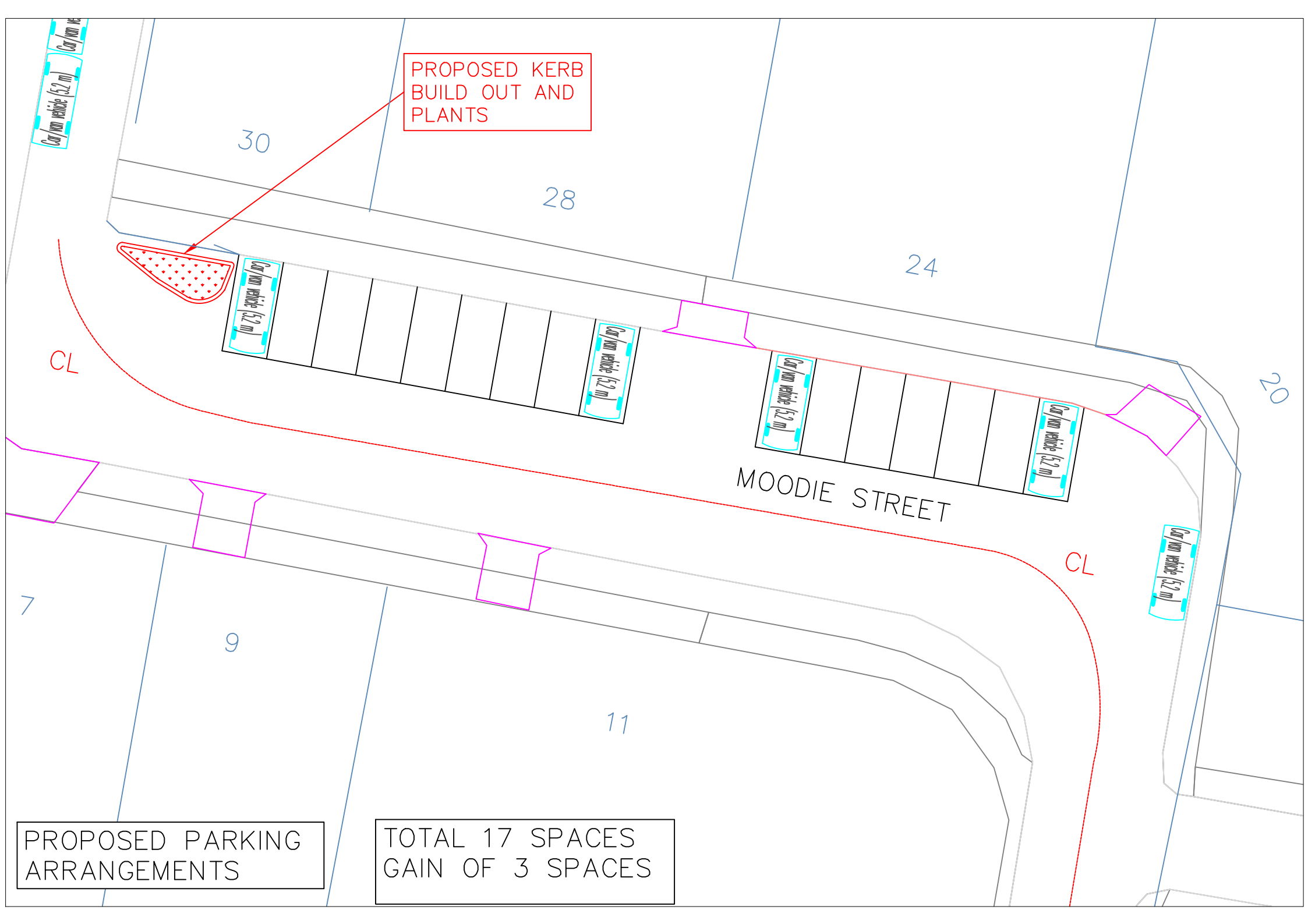
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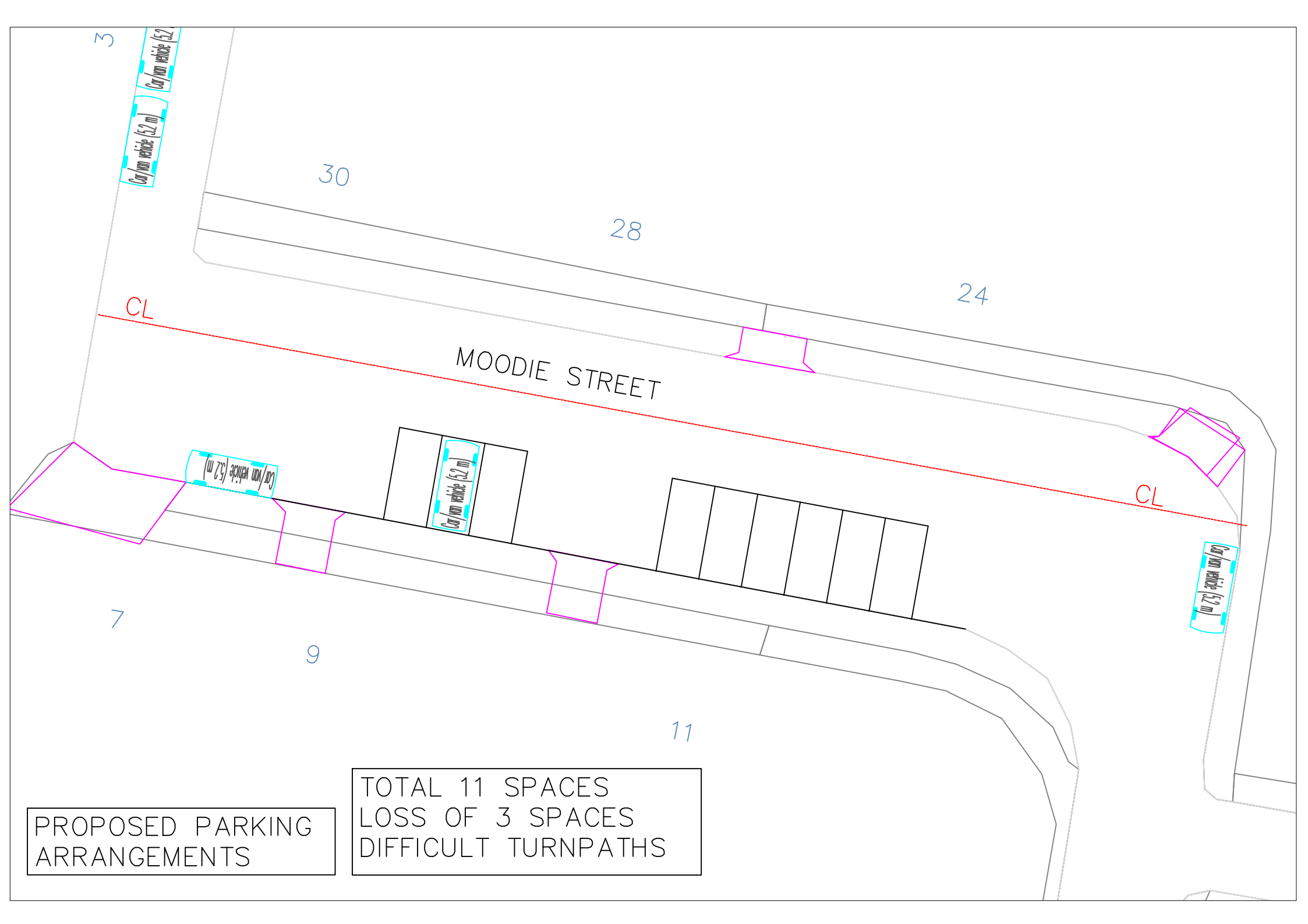
MOODIE STREET

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PROPOSED PARKING
ARRANGEMENTS

TOTAL 17 SPACES
GAIN OF 3 SPACES





3

30

28

24

CL

MOODIE STREET

CL

Car/van vehicle (5.2 m)

Car/van vehicle (5.2 m)

Car/van vehicle (5.2 m)

7

9

11

PROPOSED PARKING ARRANGEMENTS

TOTAL 11 SPACES
LOSS OF 3 SPACES
DIFFICULT TURNPATHS