

TRAFFIC & PARKING ASSESSMENT

CAR WASH

LOT 1 DP 230063 206 HIGH STREET, MAITLAND

PREPARED FOR: BROWN COMMERCIAL BUILDING.

APRIL 2023



REF: 22/176

TRAFFIC & PARKING ASSESSMENT REPORT CAR WASH

LOT 1 DP 230063 206 HIGH STREET, MAITLAND BROWN COMMERCIAL BUILDING

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D	05/04/23	Approved	JG

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This document has been authorised by

d. barrey

Date: - 5th April 2023

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1.INTRODUCTION

Intersect Traffic Pty Ltd has been engaged by Brown Commercial Building to undertake a traffic and parking assessment for a proposed car wash on Lot 1 DP 230063 – 206 High Street, Maitland. The proposed development plans are shown in *Attachment A*.

This traffic and parking assessment is required to support a development application to Maitland City Council seeking approval for the proposed development. The purpose of this document is to undertake an assessment of the likely traffic and parking impacts of the proposal on the local and state road network and associated roadside infrastructure to allow Council to assess the merits of the application.

This report presents the findings of the traffic and parking assessment and includes the following:

- An outline of the existing situation near the site.
- An assessment of the traffic impacts of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities.
- Reviews the on-site parking provided within the proposed development and assesses it against Council and Australian Standards requirements.
- Reviews existing alternative transport mode availability and suitability; and
- Presentation of conclusions and recommendations.



2. DEVELOPMENT PROPOSAL

2.1 Site Location

The site is located on the north-eastern side of High Street, Maitland approximately 60 metres north-west of Abbott Street. The site is approximately 700 metres south-east of the Levee retail and entertainment precinct, 1 km east of Maitland Railway Station and 220 metres north-west of High Street Railway Station. *Figure 1* below shows the site location from a local context.

The site is titled Lot 1 DP 230063, is addressed as 206 High Street, Maitland and has an area of approximately 810 m². The property is zoned B4 Mixed Use pursuant to the Maitland LEP (2011). The site currently contains a vacant building with previous uses of the site including a service station and most recently a rental car business. **Photograph 1** below shows the existing site conditions.

The site currently has two vehicular accesses to the site off High Street, a remnant from the previous use of the site as a service station. The proposal is to retain and modify these existing accesses as separate entry and exit accesses to facilitate the operation of the car wash and ensure all vehicles can conveniently enter and exit the site in a forward direction. *Photograph 2* below shows the existing western vehicular access to the site to be utilised by the proposed development for access to the on-site car parking.

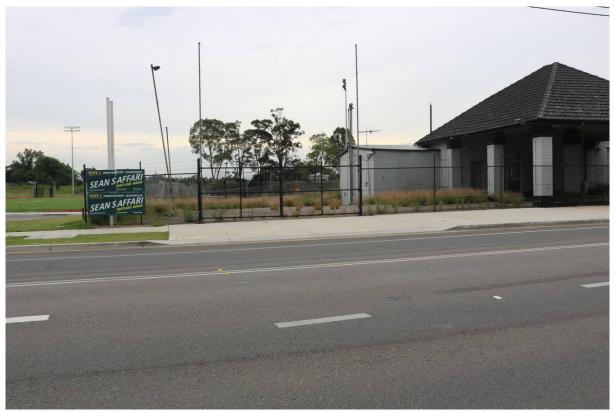


Figure 1 – Site Location





Photograph 1 – Existing site conditions.



Photograph 2 – Existing western vehicular access.



2.2 Development Proposal

The proposed development involves the following:

- Demolition of all structures on the property.
- Construction of a single storey building containing a store room with toilet (26 m²), two (2) automatic car wash bays and two (2) manual car wash bays.
- Two (2) vacuum bays to allow internal cleaning of the cars.
- One on-site car park (accessible space to comply with Building Code of Australia (BCA)).
- Modification to existing vehicular accesses to the site to provide separate entry and exit accesses to the site which facilitates the operation of the car wash and a drive through facility allowing convenient entry and exit to the site; and
- Drainage and landscaping to Maitland City Council requirements.

2.3 Existing Road Network

High Street

High Street under a functional road hierarchy is a major local collector road and the major transport route to the Maitland CBD (The Levee) area. It is under the care and control of Maitland City Council and near the site a 60 km/h speed zoning exists. It connects the CBD traffic as well as residential traffic in the area to the arterial road network at Les Darcy Drive (New England Highway) approximately 750 metres south-east of the site.

Near the site High Street is a two-lane two-way sealed urban road with adjacent parking lanes on both sides of the road. Lane widths are approximately 3.0 to 3.5 metres with kerb and gutter and concrete footpaths. At the time of inspection High Street was observed to be in good condition (see *Photograph 3*).



Photograph 3 – High Street near the site.



2.4 Traffic Generation

General guidelines on traffic generation are provided within TfNSW's RTA's Guide to Traffic Generating Developments.

However, there are no rates provided within this document therefore traffic generation has been calculated on a first principles bases using the following assumptions;

- The automatic washers have capacity to service 6 vehicles per hour.
- The self-wash bays operate at capacity at 4 vehicles per hour.
- As car washing is not an urgent service it is unlikely customers will queue to use the wash bays more than 1 queue space which is available in front of each bay. If the bays and available queue space are full then the customer is more likely to come back later than queue within or outside the site.
- 1 staff member will be on-site at any one time but will not arrive at or depart the site in the peak hour of operation; and
- The car wash is treated as a destination development i.e., passing traffic is not considered.

Thus, the peak traffic generation from the site can be calculated as follows noting each customer undertakes an inbound and an outbound movement.

Traffic generation = $(2 \times (6 + 1) + 2 \times (4 + 1) \times 2 \text{ trips per customer} = 48 \text{ vtph}$ (50% inbound and 50% outbound).

Whilst this figure for traffic generation of the development has been adopted in this assessment it is, by observation at other car wash centres, unlikely that traffic generation of this quantity will occur as the centre is unlikely to ever operate at full capacity. However, the adoption of this traffic generation figure ensures a worst-case scenario assessment of the development.

This traffic associated with the development needs to be distributed through the road network and the likely traffic distribution assumptions adopted for this assessment based on likely origin / destinations (residential areas) are:

- > The traffic entering the site will have origins:
 - High Street southbound 50% AM and PM; and
 - High Street northbound 50 % AM and PM.
- > The traffic exiting the site will have destinations:
 - High Street northbound 50% AM and PM: and
 - High Street southbound 50 % AM and PM.

It is assumed that peak operating period for the car wash coincides with the peak road network periods as a worst-case assessment scenario however the peak operating period for the car wash is likely to occur on weekends when traffic volumes are likely to be at 75 % of peak hour traffic volumes. The resulting trip distribution is presented diagrammatically in *Figure 2* below.



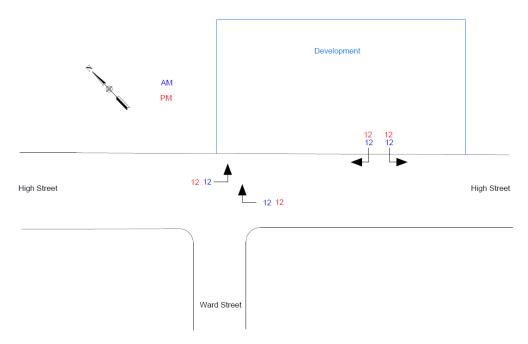


Figure 2 – Development Trip Distributions

2.5 Traffic Impacts and Considerations

2.5.1 Road Network Capacity

The capacity of the road network is generally determined by the capacity of intersections. However, Table 4.3 of the *RTA's Guide to Traffic Generating Developments* provides some guidance on mid-block capacities for urban roads for a level of service (LoS) C. This table is reproduced below.

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)						
Median or inner lane:	Divided Road	1,000					
median of inner lane.	Undivided Road	d Road 1,000 ded Road 900 djacent Parking Lane 900 vay Conditions 900 ional Parked Cars 600 ional Parked Cars 1,500					
	With Adjacent Parking Lane	900					
Outer or kerb lane:	Clearway Conditions	900					
	Occasional Parked Cars	600					
4 lane undivided:	Occasional Parked Cars	1,500					
4 lane undivided.	Clearway Conditions	1,800					
4 lane divided:	Clearway Conditions	1,900					

Table 4.3 Typical mid-block capacities for urban roads with interrupted flow

Source: - RTA's Guide to Traffic Generating Developments (2002).

Urban road capacity at the site is thus calculated based on Table 4.3 and noting the road network is generally a two-way two-lane network with parking lanes.

• High Street (900 x2) = 1,800 vtph.

Intersect Traffic undertook a traffic count at the High Street / Ward Street intersection adjacent to the site on Thursday 11th November 2021 in the AM and PM road network peaks. These road network peaks have been determined from previous counts undertaken by Intersect Traffic at the High Street / Hunter Street intersection west of the site and are.





- AM peak 8 am 9 am; and
- PM peak 3.15 pm 4.15 pm.

The current road and future network peak hour traffic volumes on High Street have been determined as follows by adopting a background traffic growth rate of 2 % per annum.

- 2023 AM 1,085 vtph and PM 1,133 vtph
- ◆ 2033 AM 1,320 vtph and PM 1,380 vtph

Noting these traffic volumes are below the technical two-way mid-block capacity of High Street it can be concluded that there is spare capacity within the road network to cater for development in the area.

The addition of only up to 24 vtph on each leg of High Street resulting from this development would not cause the two-way mid-block capacity thresholds to be reached through to 2033 therefore it is reasonable to conclude that there is sufficient capacity within the existing road network to cater for this development and the development will therefore not adversely impact on the two-way mid-block traffic flows on the road network.

2.5.2 Intersection Capacity

The intersections most impacted by the development will be the High Street / Ward Street and the High Street / Athletic field access which are adjacent to the site. Other intersections that potentially would be impacted on will be the High Street / Abbott Street intersection east of the site and the High Street / Hunter Street / Victoria Street intersection west of the site.

The development traffic will only increase traffic through these intersections by a maximum of 24 vtph after considering the likely directional distribution of the development traffic which represents approximately 2 - 3 % of existing traffic through the intersections. This is considered insignificant as it is well less than the usual daily and seasonal variances in peak hour traffic through the intersection which can be up to 10 %. Therefore, there will not be a noticeably impact on the operation of these intersections. Therefore, it is reasonable to conclude the development will not adversely impact on the operation of the adjacent local road network intersections without further intersection analysis.

2.5.3 Site Access and Parking

Post development the site access will service a car parking area containing 11 cars including wash bay, vacuum bays, and queueing spaces and under Table 3.1 of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* a car park with between 1 to 25 car parking spaces accessed via a local road providing long term parking (Class 1A) is required to have a Category 1 access facility. A Category 1 access facility is a combined entry / exit driveway between 3.0 metres and 5.5 metres wide (Table 3.2 of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking*). The existing access to the site to be utilised by the development are approximately 10 metres and 6 metres wide (see *Photograph 2*) and as separate entry and exit driveways is considered to be compliant with a Category 3 access as per Table 3.2 of Australian Standard *AS2890.1-2004 Parking* therefore is considered to be suitable for the development as it would exceed the minimum requirements of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* therefore is considered to be suitable for the development as it would exceed the minimum requirements of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking*.

From observation on site, it has been estimated that the available sight distance at the vehicular access at High Street is in excess of 130 metres which exceeds the safe sight distance requirements of Australian Standard (AS2890.1 - 2004 Parking facilities – Part 1 Off street car parking – Figure 3.2) which is 69 metres for a 50 km/h speed environment and 83 metres for a 60 km/h speed environment.





Overall, it is concluded that use of the modified existing vehicular access to the site for access to the development is suitable as it provides a suitably safe vehicular access compliant with Australian Standards and Maitland City Council requirements.

Maitland Development Control Plan (2011) under Section C - Design Guidelines C11 Vehicular Access & Car Parking and Section 5.14 of the RTA's Guide to Traffic Generating Developments (2002) sets out the requirements for on-site car parking to be provided for new developments. The relevant rates for this development proposal being, noting the appropriate land use is light industrial:

Light Industrial

1 space per 75 m² GFA or 1 space per 2 employees whichever is greater.

Therefore, the on-site car parking requirement for the development based on the Maitland Council DCP is as follows ignoring the wash bays and noting the store room has a GFA of 24 m² and 1 staff member is on-site at anyone time.

No. spaces = 24/75 or 1/2 = 1 *space* (rounded up).

As the site is providing 1 on-site staff car parking space (accessible) within the development it complies with the requirements of the Maitland DCP (2011).

The car parking also needs to be in accordance with Australian Standard *AS2890.1 – 2004 Parking facilities – Part 1 Off street car parking* and provide as a minimum the following.

- Car park size 2.4 m x 5.4 m for staff with a shared space 2.4 metres wide for an accessible car space.
- Aisle width 5.8 m; and
- Blind aisle extension 1 m.

A review of the plans indicates the accessible staff car park provided in the development is compliant with Australian Standard *AS2890.1 – 2004 Parking facilities – Part 1 Off street car parking.* Overall, it is concluded the proposed on-site car parking complies with *Australian Standard AS2890.1-2004* and Maitland City Council's DCP (2011).

2.5.4 Alternative Transport Modes

Hunter Valley Buses provide public transport services in the area. A review of the route maps for the service indicates that the site has good access to public transport (Routes 179, 180, 181, 182 & 183) as shown in the bus route extract shown in *Figure 3* below. The buses provided connections to most parts of Maitland as well as Newcastle, Newcastle Airport and Greenhills shopping centre. The development will not generate any additional demand for public transport travel from staff. The nearest bus stops are located approximately 50 and 60 metres north-west of the site on High Street on both sides of the road near the Shell Service Station. these are within convenient walking distance of the site. Therefore, no additional public transport services or infrastructure is required in the area as the existing services and infrastructure are considered suitable given there will be no additional demand generated by the development.

Pedestrians currently use the existing concrete footpath network along High Street including over the development frontage and the same conditions apply to the opposite side of the road. **Photograph 4** below shows the existing conditions over the development frontage. These extend from the site to High Street railway station (see **Photograph 5**) and to the Maitland Mall. These are considered suitable and given there is unlikely to be any additional pedestrian demand resulting from the development no nexus exists for additional pedestrian facilities in the area resulting from this development.

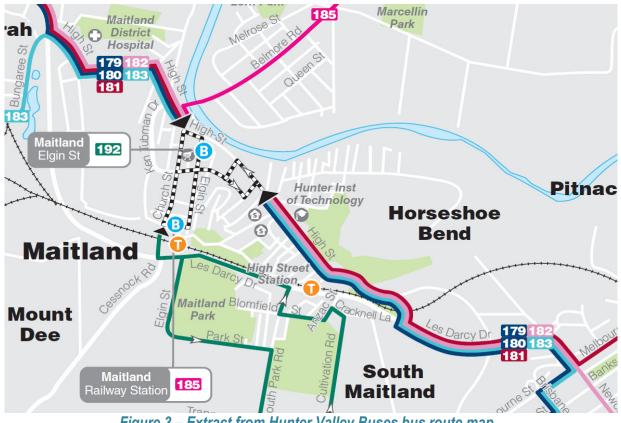


Figure 3 – Extract from Hunter Valley Buses bus route map

Bicycle facilities are not available in High Street with cyclists expected to share the parking lane and travelling lanes. The development again is unlikely to generate any additional bicycle traffic therefore nexus exists for the provision of additional facilities adjacent to the site.

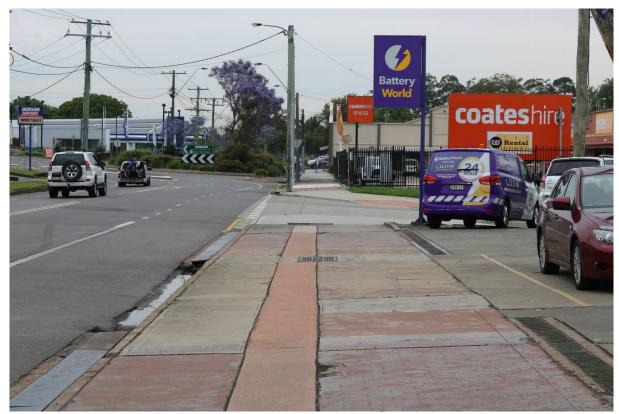
2.5.5 Servicing

The development has been designed for waste servicing via Council's normal kerbside collection from the car wash manager required to move their bins out on the kerbside for collection and back in after collection. As a car wash all consumables will be collected by the car wash manager in a light utility vehicle and delivered to the site for unloading by the car wash manager in the store room using the proposed on-site car parking on a once-a-day frequency. Therefore, servicing arrangements for the site are considered satisfactory and a designated service bay is not required.





Photograph 4 – Pedestrian footpath High Street – development frontage



Photograph 5 – Pedestrian Pathway to High Street Railway Station.



3. CONCLUSIONS

This traffic and parking assessment for the proposed car wash on Lot 1 DP 230063 – 206 High Street, Maitland has concluded:

- High Street has sufficient available spare two-way mid-block capacity to cater for the development.
- The proposal may generate up to an additional 48 vtph in the peak periods on the local and state road network and this additional volume will not impact on the operation of any intersections on the nearby local and state road network.
- The use of the modified existing vehicular access to the site for access to the development is suitable as it provides a suitably safe vehicular access compliant with Australian Standards and Maitland City Council requirements.
- As the development provides a single accessible staff car parking spaces the development complies with the on-site car parking requirements of Maitland Council's DCP.
- Servicing arrangements for the site are considered satisfactory with waste collection being via Council's kerbside collection and consumables transported to the site by the site manager using a light utility vehicle and the on-site staff car park.
- As the existing pedestrian infrastructure around the site is considered suitable and no significant increase in pedestrian traffic will result from the development, no nexus exists for additional pedestrian facilities in the area.
- As the development will not generate any significant additional bicycle traffic there is no nexus for the provision of additional facilities adjacent to the site; and
- No additional public transport services or infrastructure is required in the area as the existing services and infrastructure are considered suitable and there will be no significant additional demand for public transport resulting from the development.

4. **RECOMMENDATION**

Having carried out this traffic and parking assessment for the proposed car wash on Lot 1 DP 230063 – 206 High Street, Maitland it is recommended that the proposal can be supported as it is considered it would not adversely impact on the local and state road network and meets all the requirements of Maitland City Council, Australian Standards and TfNSW.

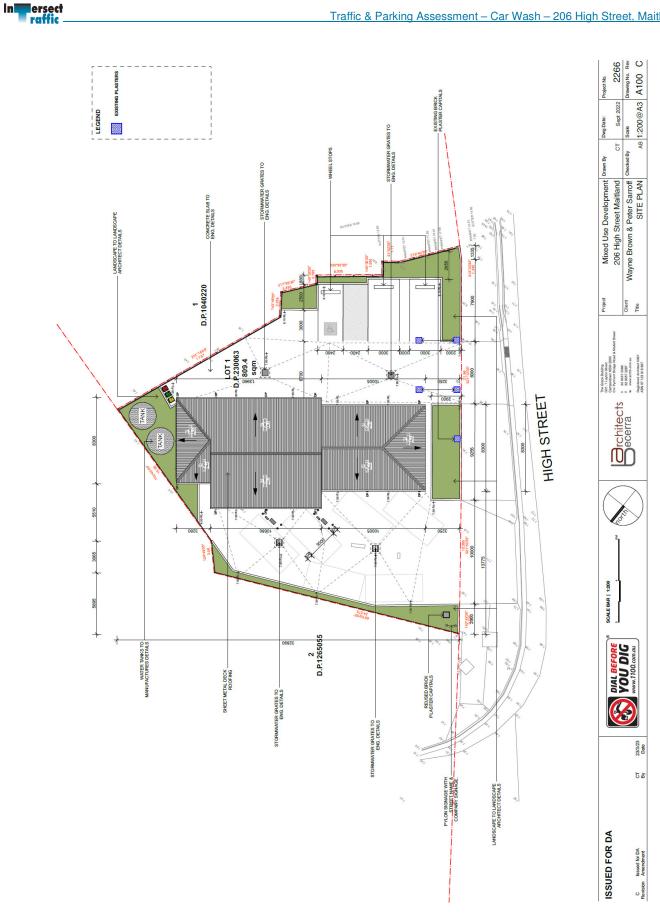
a. barry

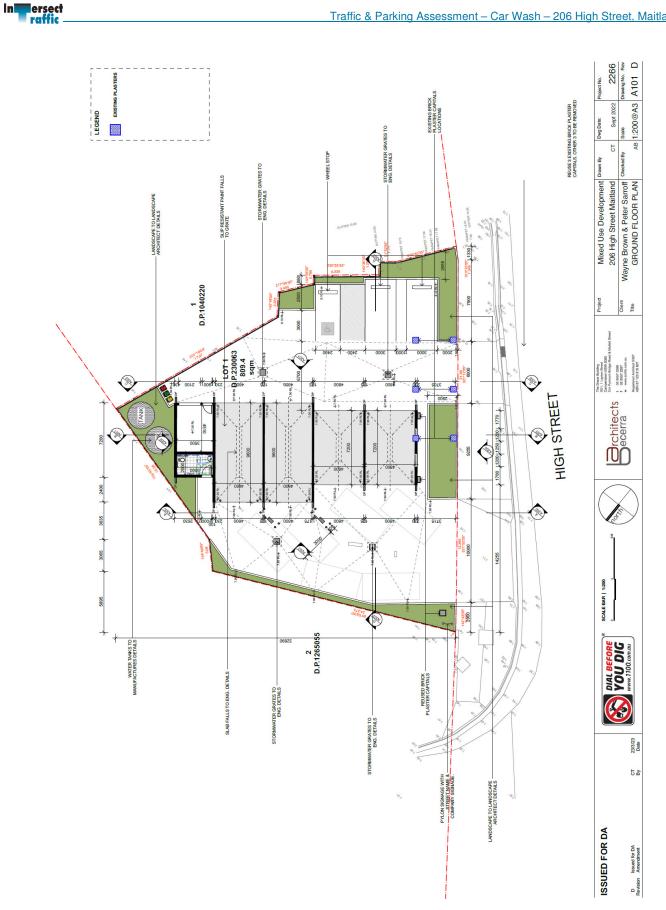
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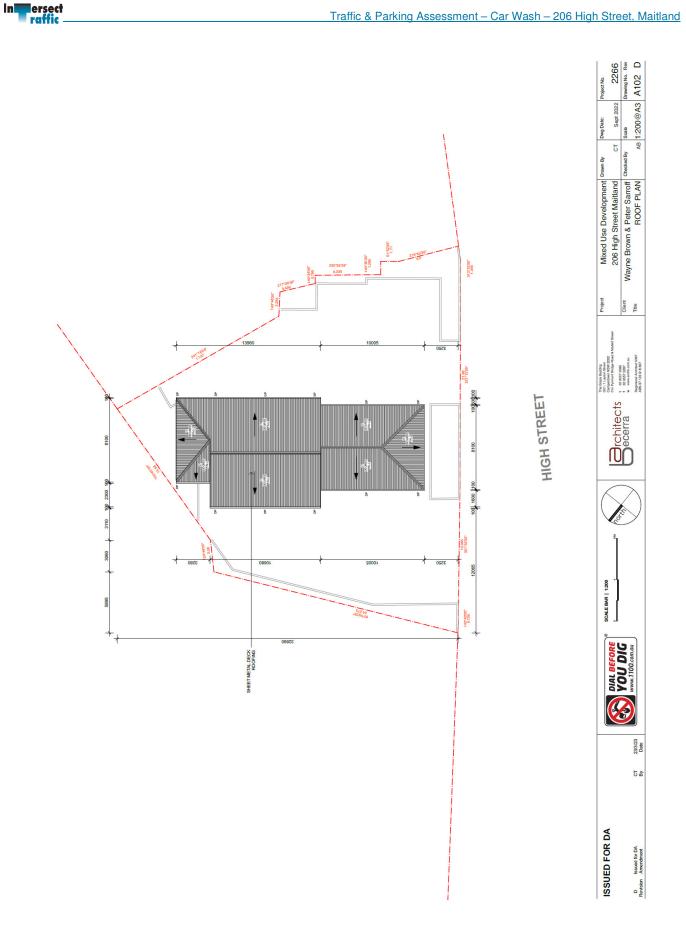


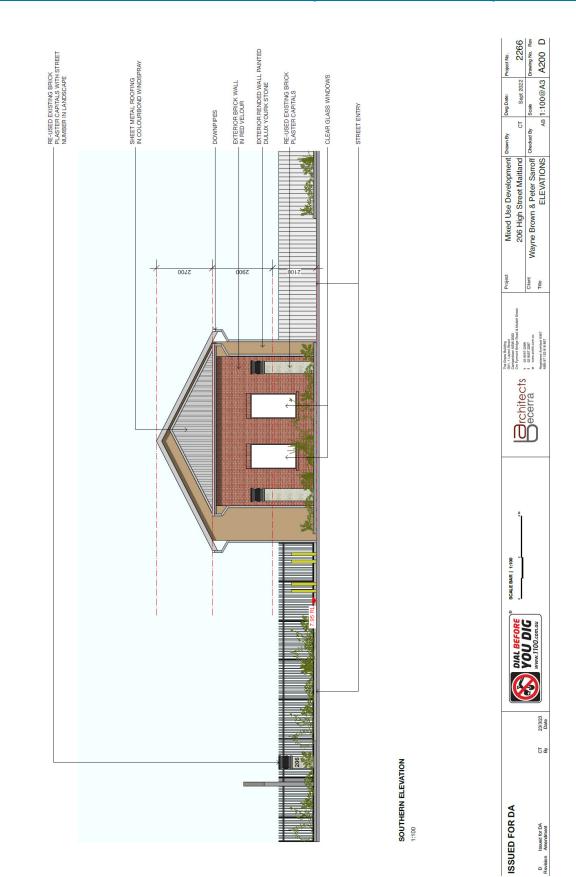
ATTACHMENT A DEVELOPMENT PLANS

Attachment A



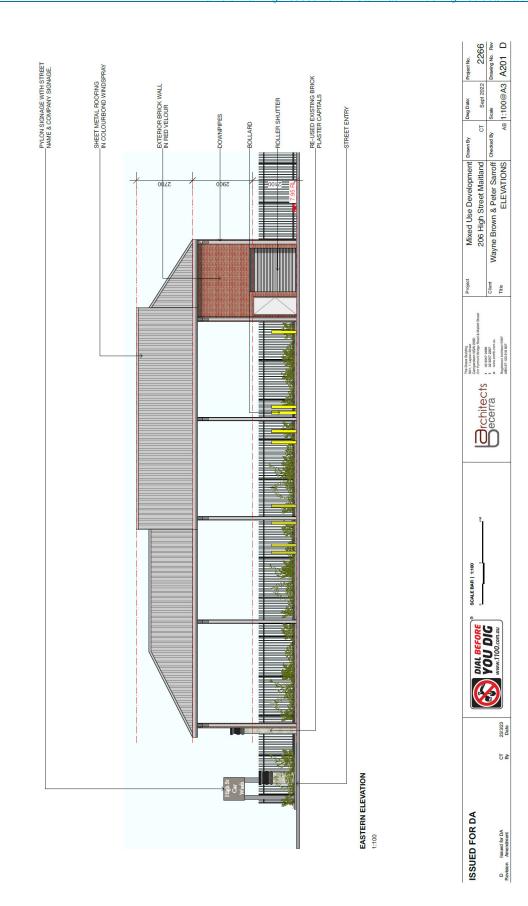


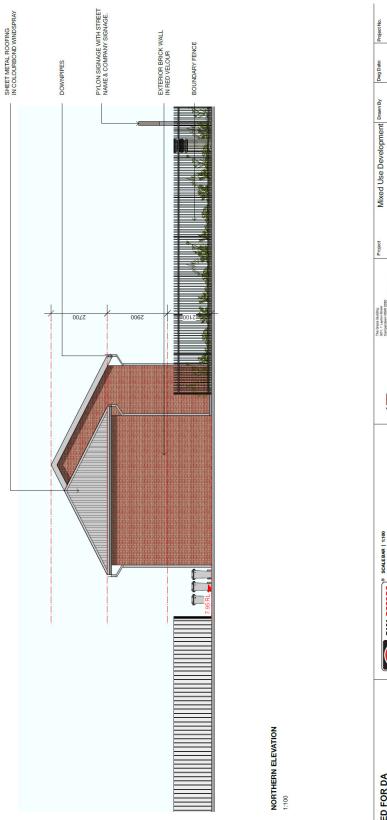


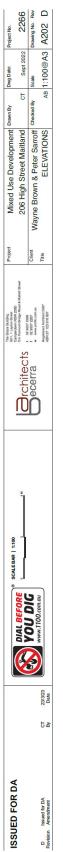


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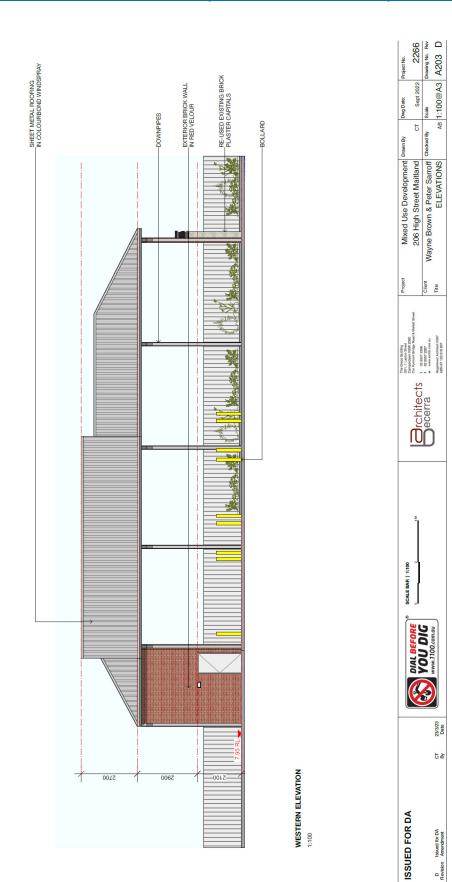
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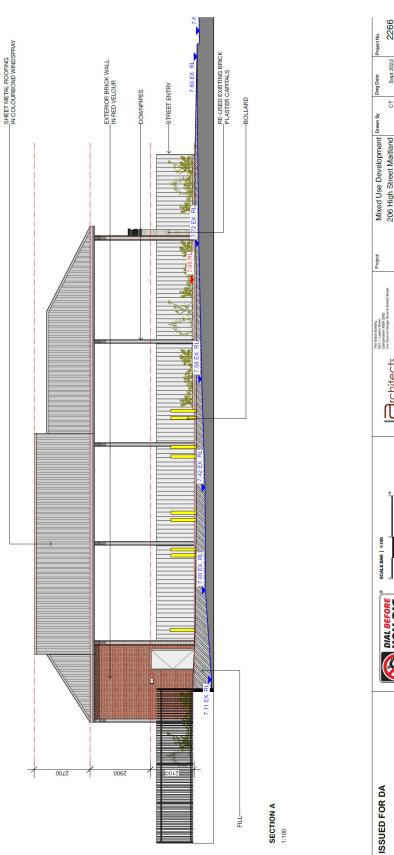




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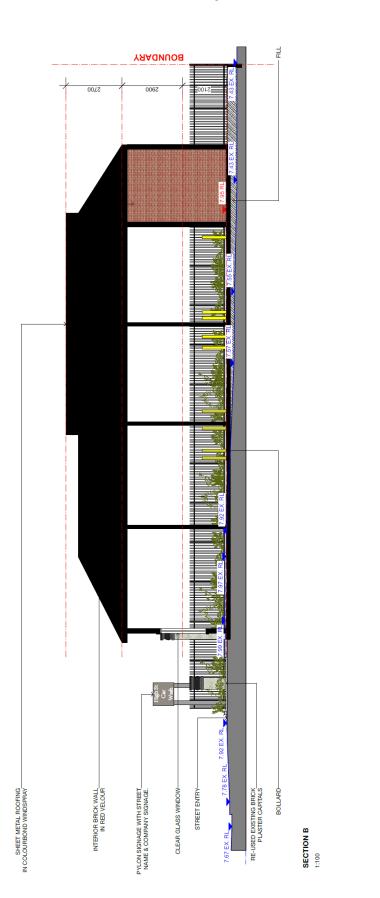


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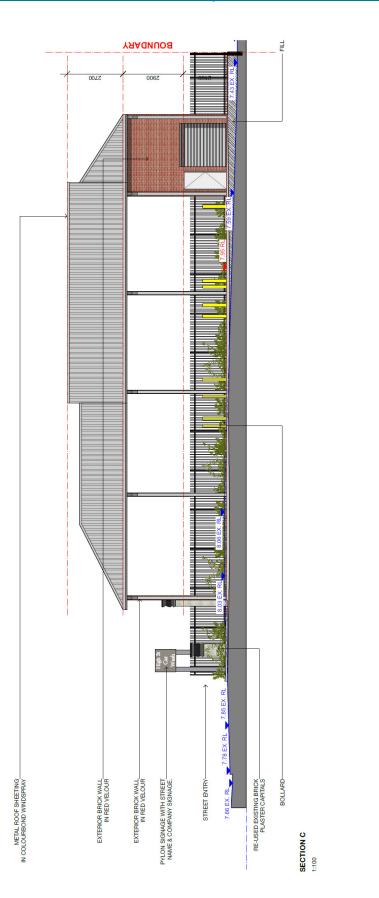
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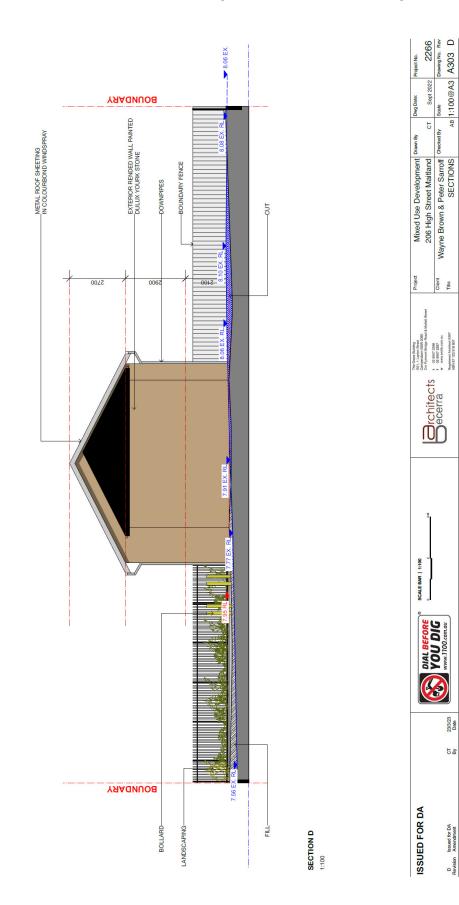


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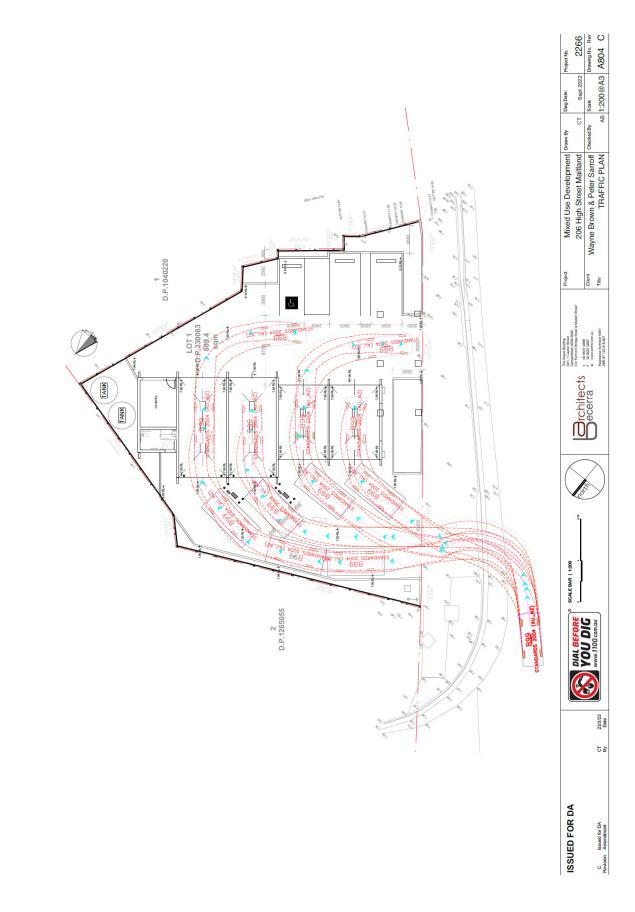


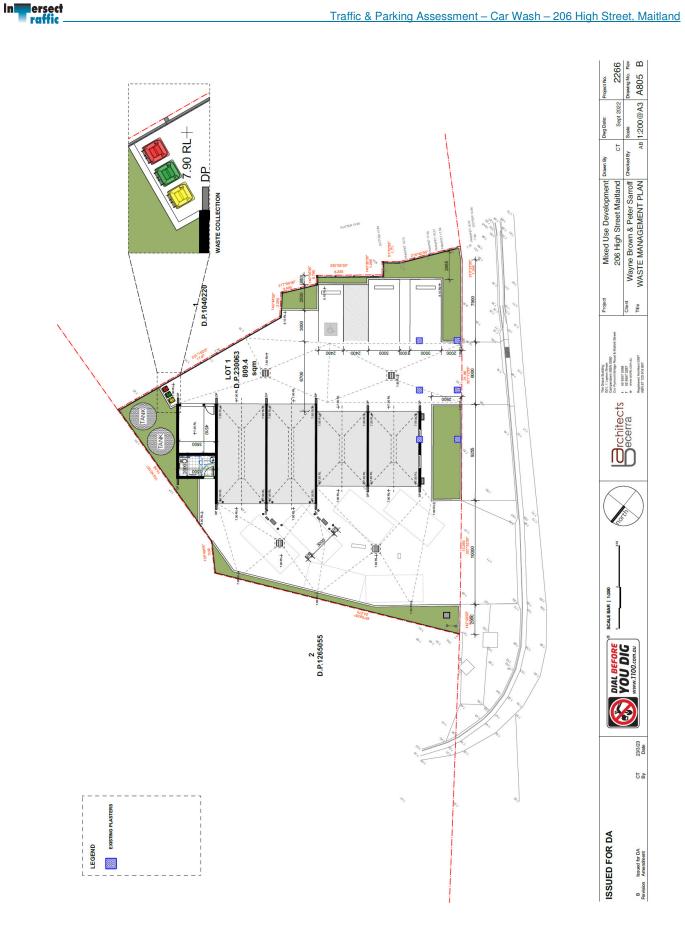


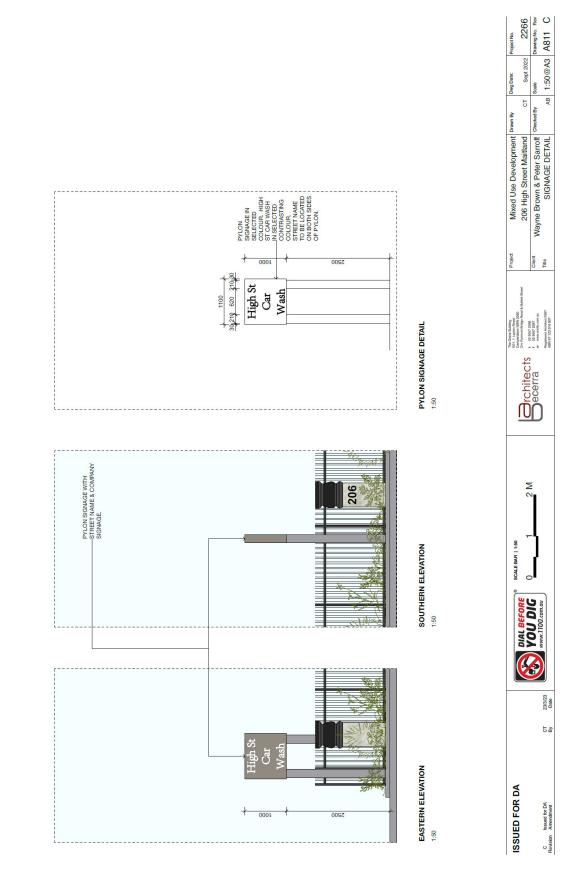




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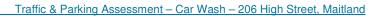


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ATTACHMENT B TRAFFIC COUNT DATA

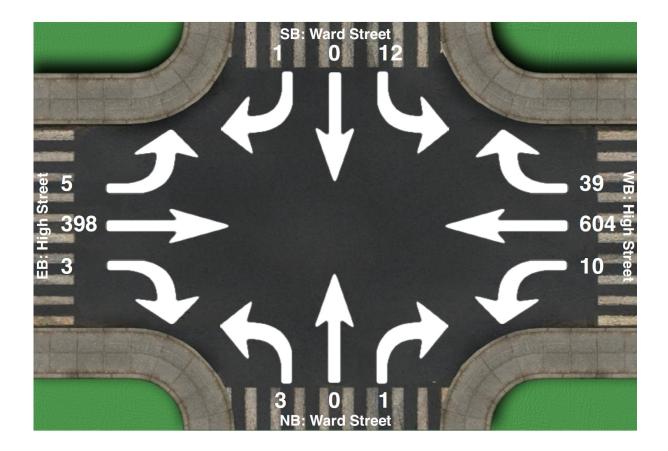
Attachment B





Intersection Peak Hour

Location:Ward Street at High Street, MaitlandGPS Coordinates:Lat=-32.738861, Lon=151.562165Date:2021-11-11Day of week:ThursdayWeather:Jeff



Intersection Peak Hour

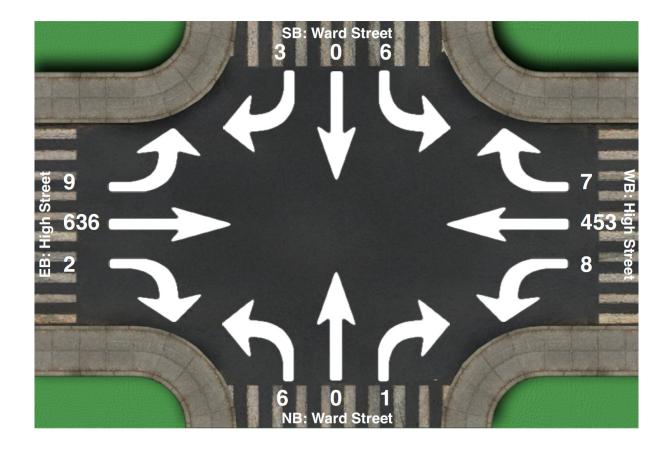
08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Vehicle Total	12	0	1	10	604	39	3	0	1	5	398	3	1076
Factor	0.75	0.00	0.25	0.50	0.92	0.75	0.75	0.00	0.25	0.62	0.81	0.38	0.86
Approach Factor	0.81			0.90			0.50						



Intersection Peak Hour

Location:Ward Street at High Street, MaitlandGPS Coordinates:Lat=-32.739922, Lon=151.563250Date:2021-11-11Day of week:ThursdayWeather:WetAnalyst:Jeff



Intersection Peak Hour

15:15 - 16:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Vehicle Total	6	0	3	8	453	7	6	0	1	9	636	2	1131
Factor	0.50	0.00	0.75	0.67	0.79	0.58	0.75	0.00	0.25	0.75	0.86	0.25	0.92
Approach Factor	0.56			0.81			0.58			0.86			