

A1714853Q Traffic Impact Assessment 1.3

8th December 2017

Redland City Council
PO Box 21
Cleveland QLD 4163

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2017/837

Date: 20 March 2018



Dear Sir/Madam,

Traffic Impact Assessment – Proposed Residential Apartments 85-91 Hamilton Street, Redland Bay

1. Overview

ML Traffic Engineers was commissioned by Will Cook to undertake a traffic and impact assessment for the proposed residential apartment at 85-91 Hamilton Street, Redland Bay. While preparing this report, the subject site and its environs have been inspected, plans of the proposal examined, and all relevant traffic and parking data collected and analysed.

2. Existing Conditions

2.1 Location and Land Use

The subject site is located on the western side of Hamilton Street within a medium density residential zone. The surrounding area is predominantly urban residential and open space, with Sel Ouridge Park north of the subject site and Pitt Street Park to the north-west.

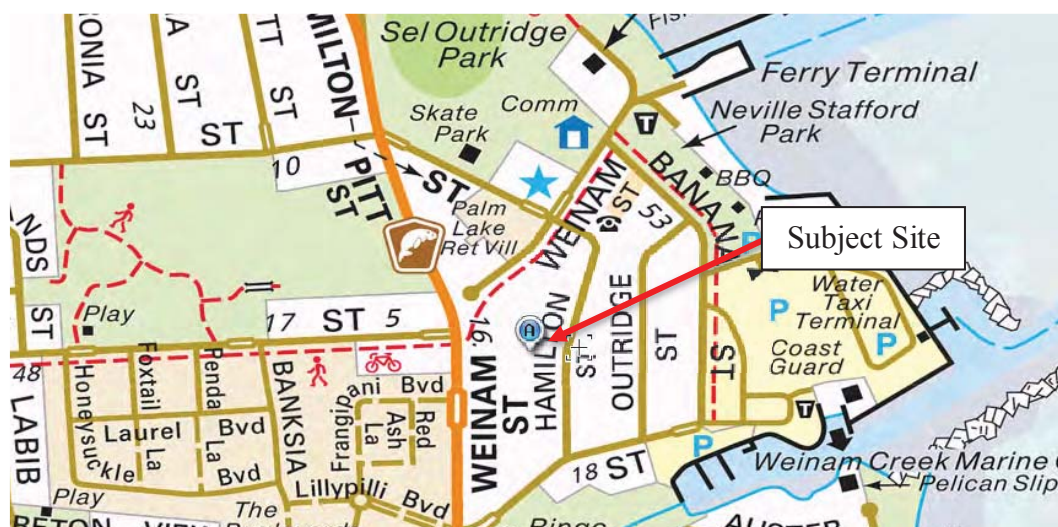


Figure 1: Location of the Subject Site

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Figure 2: Subject Site and Surrounding Context

2.2 Road Network

The subject site is located on the western side of Hamilton Street, a local road with an approximate north to south orientation. Hamilton Street is undivided and unmarked with a carriageway width of approximately 5.6m.

Hamilton Street terminates at Meissner Street approximately 120m south of the subject site and intersects with Weinam Street approximately 180m to the north. Meissner Street is a local road with an approximate south-west to north-east orientation, and connects the area to Weinam Street/Pitt Street/Hamilton Street, a local connector road.

Hamilton Street continues north beyond the intersection with Weinam Street to also intersect with Weinam Street/Pitt Street/Hamilton Street

2.3 Road Network

Traffic volumes for Hamilton Street were received from Redland Bay City Council. The survey were undertaken in the vicinity of 35 Hamilton Street in April 2017 and indicate the average hourly traffic volumes are:

- 8:00am – 9:00am – 474 vehicles per hour
- 3:00pm – 4:00pm – 622 vehicles per hour
- 5:00pm – 6:00pm – 507 vehicles per hour

2.4 Public Transport

Public transport is available via a bus stop on Hamilton Street, approximately 240m from the subject site. The bus stop provides access to services 250, 280, 281 and 282.

- Route 250 travels between Redland Bay and Brisbane City, with intermediate stops at Redland Bay, Victoria Point, Thornlands, Cleveland, Alexandra Hills, Capalaba, Chandler and Carindale. The service operates half hourly between 4:30am and 9:15pm, Monday to Friday. On Saturday the service runs hourly between 5:30am and 10:30pm and on Sunday the service operates hourly between 6:30am and 6:00pm.
- Route 280 travels between Point Talburpin and Griffith University with intermediate stops at Redland Bay, Victoria Point Shopping Centre, Sheldon, Eight Mile Plains and Upper Mount Gravatt. The service runs hourly from 8:00am to 8:00pm, Monday to Friday. On Saturday the final service is at 7:00pm. There is no service on Sunday.
- Route 281 travels between Point Talburpin and Brisbane City with intermediate stops at Redland Bay, Victoria Point Shopping Centre, Sheldon, Eight Mile Plains, Upper Mount Gravatt, Griffith University and Buranda. There are four service runs from 5:30am to 7:00am toward the City, Monday to Friday. In the opposing direction there are four service runs between 5:50pm and 7:15pm.
- Route 282 travels between Victoria Point and Loganholme Station with intermediate stops at Redland Bay and Mount Cotton. The service operates hourly between 6:00am and 6:00pm, Monday to Friday and between 8:00am and 4:00pm on Saturday.

3. Proposal

The site currently contains an existing 2-storey dwelling which will be demolished to enable the construction of the proposed development.

The proposal seeks to develop a 5-storey apartment building, comprising of 37, 3-bedroom dwellings. There will be 58 car parking spaces (including three disabled spaces) provided on site located within two basements floors.

4. Vehicle Access and Car Parking Considerations

4.1 Planning Scheme Assessment

The car parking requirements for the proposal are contained within Part 9, Schedule 1 of the Redland City Council Planning Scheme. The car parking rate specified for the apartment building is:

- 1 space per dwelling unit plus 1 visitor space per 4 dwelling units

This equates to 37 residential car parking spaces and 9 visitor spaces, a total requirement of 46 car parking spaces. With 58 car parking spaces provided on site, the requirements of Schedule 1 of the Planning Scheme are exceeded.

In addition to the above, Part 8 – General Codes, Division 1 Access and Parking specifies a rate for car parking spaces for persons with a disability. Part 8 specifies a rate of 1 disabled space for every 50 car parking spaces. The proposal provides three disabled spaces, therefore exceeding the requirement.

4.2 Adequacy of Proposed Vehicular Access and Parking Layout

Assessment of the access, car parking layout, circulating lanes and ramp gradients was undertaken. The following comments are in relation to the car park and access layout:

- Queuing area are provided for at least three vehicle lengths in accordance with Part 8 - General Codes, Division 1 of the Planning Scheme.
- Circulating lanes of greater than 6.2m are provided in accordance with Part 9 - Schedule 1 of the Planning Scheme.
- Visibility splays at the boundary of 45% are to be provided in accordance with Part 9 - Schedule 1 of the Planning Scheme.

- Three disabled spaces have been provided, however the width of each should be 3.2m, as specified in Part 9 - Schedule 1 of the Planning Scheme. The current design exceed the requirements of AS2890.6 Off-street parking for people with disabilities which requires a 2.4m parking spaces and 2.4m shared zone.
- Ramp gradients from the crossover to basement level 1 have been calculated to be:
 - 1:20 for first 6m
 - 1:7 for 14m (min 1:6)
 - 1:8 transition for 2m
 - The above gradients are acceptable and in accordance with the Planning Scheme and AS2890.1:2004.
- Ramp gradients from the basement level 1 to basement level 2 have not been provided and will need to be reviewed to ensure it adheres to Part 9 - Schedule 1 of the Planning Scheme, and AS2890.1:2004 Off Street Car Parking Section 2.5.3.
- Minimum headroom of 2.2m is to be provided in accordance with AS2890.1:2004 Section 5.3.1.
- Column placement adheres to the required car parking space design envelop specified in AS2890.1:2004 Figure 5.2.
- Swept path analysis for a B85 car has been undertaken for a number of car parking spaces using AutoTURN. Forward direction ingress and egress can be achieved from most spaces; however, the following changes are required to ensure all manoeuvres are possible:
 - Space 6 ingress requires a blind aisle extension of 1.5m
 - Space 10 and 11 are required to be offset from the wall by 300mm
 - Spaces 31 requires a blind aisle extension of 1m, which extends the length of the car parking space
 - Space 32 requires 750mm between the space and the wall for the egress movement to be achievable
 - Space 48 is required to be offset from the wall by 300mm
- Swept path analysis for a B99 car has been undertaken within the circulating lane using AutoTURN. The following comments apply:
 - Internal manoeuvring from the crossover to the basement level 2 can be achieved.

- Sufficient width is provided for two cars to pass one another at various points.
- Swept path diagrams provided have been undertaken on the current layout in which the aforementioned car parking space issues have not yet been rectified.
- A turnaround area has been provided on basement level 2 adhering to AS2890.1:2004 Section 2.4.2c which stipulates that a blind aisle greater than 6 car parking spaces in length requires a turnaround area at the end of the aisle.

4.3 Adequacy of Site Servicing Layout

Waste collection bins will be located within basement level 1. It is intended that the waste collection vehicle will drive forward down the ramp to collect the bins, and turn around within the site to exit in a forward direction.

The refuse vehicle will need to be 6.4m long collection truck sourced through an independent waste collection company.

5. Traffic Impact Considerations

5.1 Traffic Generation Rate

The traffic generation rate of the proposed development can be determined by analysing typical rates for residential developments as discussed in The Department of Main Roads Road Planning and Design Manual: Chapter 3, Road Planning and Design Fundamentals:

- RTA NSW Guide to Traffic Generating Developments specifies a peak hour generation rate of 0.4 vehicle trips per dwelling for a high-density development
- Queensland Transport specifies a peak hour generation of 0.29 vehicle trips per dwelling for a high-density development

The higher rate of 0.4 vehicle trips per dwelling will be applied to this development.

5.2 Traffic Generation and Distribution

The proposed 37-unit development will generate in the order of 14.8 vehicle trips in both the AM and PM peak period.

The AM peak period will see in the order of 80% of the vehicle trips generated be outbound trips to coincide with the peak morning commuter period, and the PM peak period will see in the order of 80% of the vehicle trips generated being inbound trips to coincide with the peak evening commuter period.

This equates to an AM peak hour traffic generation of 11.8 outbound vehicle trips and 3 inbound vehicle trips, and a PM peak hour traffic generation of 3 outbound vehicle trips and 11.8 inbound vehicle trips.

Traffic distribution will be based on network connectivity consideration. Weinam Street/Pitt Street/Hamilton Street is a local connector road that runs parallel to Hamilton Street. This road connects Redland Bay to Brisbane City, approximately 45km north-west of the subject site. Brisbane City is accessible via two different routes, one heading west from the subject site (via M1 and M3), and the other heading north (via State Route 21).

5.3 Traffic Impact

The intersections of Hamilton Street and Pitt Street north of the subject site, and that of Meissner Street and Weinam Street south of the subject site will accommodate the majority of the traffic generated by the proposed development. Assuming an even split for north and south bound traffic generated from the subject site, each of the two intersections will see an increase in traffic in the order of 7.4 vehicles in both the AM and PM peak periods.

The traffic generated by the proposed development is low and will not have any adverse effects on Hamilton Street, on the two intersections discussed, or the surrounding road network.

6. Conclusions

Based on the discussions presented in this report, it is considered that:

- The proposed 37-unit apartment development requires 46 car parking spaces for residents and visitors, as determined by the City's Planning Scheme. With 58 car parking spaces provided on site the car parking space requirement has been exceeded.
- The low level of traffic impact, in the order of 14.8 trips per hour in the AM and PM peak periods, will not adversely affect the operation of Hamilton Street, or the intersections of Hamilton Street and Pitt Street, and Meissner Street and Weinam Street.
- Ramp gradients from the ground floor to basement level 1 adhere to the requirements of Part 9 - Schedule 1 of the Planning Scheme, and AS2890.1:2004 Off Street Car Parking Section 2.5.3.
- Ramp gradients from basement level 1 to basement level 2 have not been provided and will need to be reviewed to ensure it adheres to Part 9 - Schedule 1 of the Planning Scheme, and AS2890.1:2004 Off Street Car Parking Section 2.5.3.
- The vehicular access and car park layout require design adjustments to adhere to the requirements of the City's Planning Scheme and AS2890.1:2004 Off Street Car Parking:
 - Blind aisle extension of 1m to be provided
 - Offset of 300mm of car parking spaces adjacent to walls
 - Widening of the disabled space to 3.2m
 - Providing width beside car parking spaces opposite ramps to enable the egress manoeuvre to be undertaken
- Swept path analysis was undertaken for a B85 car using AutoTURN for any constrained car parking spaces. Forward direction ingress and egress will be achievable from each car parking space once the above changes have been implemented.
- Swept path analysis was undertaken for a B99 car using AutoTURN for the driveway and access. Forward direction ingress and egress from the site is achievable.
- A turn around area has been provided on basement level 2 in accordance with AS2890.1:2004 Section 2.4.2c.

- Waste collection will be undertaken on basement level 1 utilising a 6.4m collection truck. The truck is able to enter and exit the site in a forward direction.
- Taking into consideration the changes required to be implemented to ensure the car parking layout conforms to the Planning Scheme and AS2890.1:2004 Off Street Car Parking, there are no traffic engineering reasons why the proposed development of 85 – 91 Hamilton Street, Redland Bay should be refused.

If you have any questions regarding the arguments presented in this letter, please do not hesitate to contact me on 0406 473 681 or shayes@mltraffic.com.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Shayes'.

Sonja Hayes
Traffic Engineer/Transport Planner

